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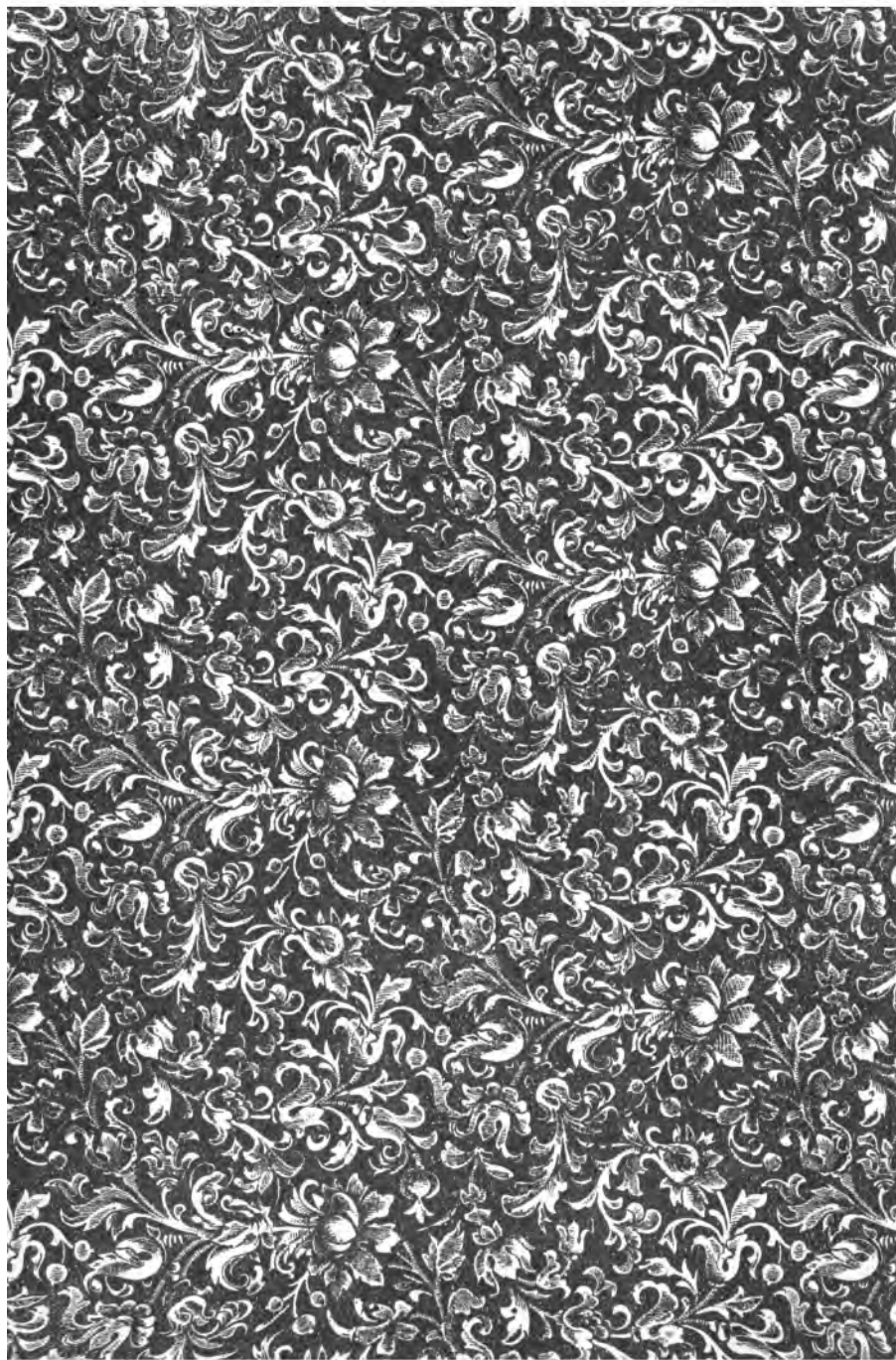
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LELAND STANFORD JUNIOR UNIVERSITY

TWELFTH
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1902-03

"The Benignence of the Creator towards Man on Earth, and the possibilities of Humanity, are one and the same."—LELAND STANFORD.

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STANFORD UNIVERSITY, CALIFORNIA

PUBLISHED BY THE UNIVERSITY

APRIL, 1903



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DIRECTORY

The rooms in the Inner Quadrangle are numbered consecutively, beginning at the left of the main entrance, ten numbers being allotted to each building. In the Outer Quadrangle forty numbers are allotted to each of the larger buildings and ten numbers to each one-story building, beginning with the University Library and number 160. The Engineering buildings south of the Quadrangles begin with number 500. The Chemistry building is on the west avenue between the Quadrangles and the Museum. The Studios are in the frame building, south of the Engineering buildings.

The office of the PRESIDENT is room 112.

The office of the REGISTRAR is room 110.

The office of the TREASURER is room 250 (Outer Quadrangle.)

The LIBRARY occupies the Thomas Welton Stanford Library Building in the Outer Quadrangle.

The office of the ASSISTANT PROFESSOR OF HYGIENE is room 60.

The various Departmental offices are given in the SCHEDULE and in the DIRECTORY OF OFFICERS AND STUDENTS.

The University Post, Telegraph, and Telephone Office is *Stanford University, California*.

The University Railway Station and Express Office is *Palo Alto, California*.

Requests for *Registers*, blanks, and other printed matter, and inquiries regarding terms of admission, advanced standing, etc., should be addressed to *The Registrar, Stanford University, Cal.*

UNIVERSITY CALENDAR

1902

Aug.	30	Saturday	Entrance Examinations begin.
Sept.	2-3	Tues.-Wed.....	Registration of Matriculated Students.
Sept.	4	Thursday.....	Registration of New Students.
Sept.	5	Friday.....	Instruction begins.
Sept.	12	Friday.....	Conferring of Degrees.
Nov.	27	Thursday.....	} Thanksgiving Recess.
Nov.	30	Sunday.....	
Dec.	19	Friday.....	First Semester ends.

1903

Jan.	2	Friday.....	Entrance Examinations begin.
Jan.	5-6	Mon.-Tues.....	Registration for Second Semester.
Jan.	7	Wednesday.....	Instruction begins.
Jan.	9	Friday.....	Mid-Year Conferring of Degrees.
Feb.	22	Sunday.....	Washington's Birthday.
Mar.	9	Monday.....	Founder's Day.
Mar.	27	Friday.....	} Mid-Semester Recess.
April	5	Sunday	
May	14	Thursday.....	Memorial Day.
May	21	Thursday.....	Instruction ends.
May	22-26	Fri.-Tues.....	Entrance Examinations in English.
May	24	Sunday.....	Baccalaureate Sermon.
May	25	Monday.....	Class Day.
May	26	Tuesday.....	Alumni Day.
May	27	Wednesday.....	Commencement.

Aug.	21	Friday.....	Entrance Examinations begin.
Aug.	25-26	Tues. -Wed	Registration of Matriculated Students.
Aug.	26	Wednesday	Registration of New Students.
Aug.	27	Thursday	Instruction begins.
Sept.	4	Friday	Conferring of Degrees.
Nov.	26	Thursday.....	} Thanksgiving Recess.
Nov.	29	Sunday.....	
Dec.	18	Friday.....	First Semester ends.

1904

Jan.	1	Friday.....	Entrance Examinations begin.
Jan.	4-5	Mon.-Tues	Registration for Second Semester.
Mar.	25	Friday.....	Mid-Semester Recess begins.
May	18	Wednesday.....	Commencement.

BOARD OF TRUSTEES

FOUNDERS

*LELAND STANFORD

JANE LATHROP STANFORD

TRUSTEES

Mr. TIMOTHY HOPKINS,	- - - - -	San Francisco
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The Hon. NATHAN W. SPAULDING,	- - - - -	Oakland
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OFFICERS OF THE BOARD OF TRUSTEES

Mr. SAMUEL F. LEIB,	- - - - -	President
Mr. RUSSELL J. WILSON,	- - - - -	Vice-President
Mr. CHARLES G. LATHROP,	- - - - -	Treasurer
Mr. GEORGE EDWARD CROTHERS,	- - - - -	Secretary

* Died June 21, 1893.

FACULTY AND OTHER OFFICERS

FACULTY

[Arranged in groups in the order of seniority of appointment]

DAVID STARR JORDAN, President of the University.

Kazmin House, Serra Ave.

M. S., Cornell University, 1872; M. D., Indiana Medical College, 1875; Ph. D., Butler University, 1878; LL. D., Cornell University, 1886, Johns Hopkins University, 1902. Instructor in Botany, Cornell University, 1871-72; Professor of Natural History, Lombard University, 1872-73; Principal of Appleton (Wis.) Collegiate Institute, 1873-74; Student and afterward Lecturer in Marine Botany, Anderson School at Penikese, 1874; Teacher of Natural History, Indianapolis High School, 1874-75; Professor of Biology, Butler University, 1875-79; Assistant to the U. S. Fish Commission, 1877-91; Professor of Zoology, Indiana University, 1879-85; President of Indiana University, 1885-91; President of the California Academy of Sciences, 1896-98, 1901-03; U. S. Commissioner in charge of Fur Seal Investigations, 1896-98.

JOHN CASPER BRANNER, Vice-President of the University,
and Professor of Geology.

13 Alvarado Row.

B. S., Cornell University, 1882; Ph. D., Indiana University, 1885; LL. D., University of Arkansas, 1897. Assistant Geologist, Imperial Geological Survey of Brazil, 1875-78; Special Botanist in South America, 1880-81; Special Agent of the U. S. Department of Agriculture for Investigating Cotton and the insects affecting it in Brazil, 1882-83; Topographical Geologist of the Geological Survey of Pennsylvania, Anthracite District, 1883-85; Professor of Geology, Indiana University, 1885-91; State Geologist of Arkansas, 1887-92.

OLIVER PEEBLES JENKINS, Professor of Physiology and
Histology.

3 Lasuen St.

A. B., Moore's Hill College, 1869, A. M., 1872; M. S., Indiana University, 1886, Ph. D., 1889. Professor of Natural Science, Moore's Hill College, 1876-82; Professor of Natural Science, Indiana State Normal School, 1883-86; Professor of Biology, De Pauw University, 1886-91.

MELVILLE BEST ANDERSON, Professor of English Literature.

Mento Park.

A. M., Butler University, 1877. Professor of Modern Languages, Butler University, 1877-80; Professor of English Literature, Knox College, 1881-86; Professor of Literature and History, Purdue University, 1886-87; Professor of the English Language and Literature, University of Iowa, 1887-91.

JOHN MAXSON STILLMAN, Professor of Chemistry.*2 Alvarado Row.*

Ph. B., University of California, 1874, Ph. D., 1885. Assistant in Chemistry, University of California, 1873-75; Student in Chemistry, Strassburg and Würzburg, 1875-76; Instructor in Organic and General Chemistry, University of California, 1876-82; Chemist of the Boston and American Sugar Refining Company, 1882-92.

FERNANDO SANFORD, Professor of Physics.*450 Kingsley Ave.*

B. S., Carthage College, 1879, M. S., 1882; Student, University of Berlin, 1886-88; Professor of Physical Science, Mt. Morris College, 1879-82; Superintendent of Schools, Ogle County, Ill., 1882-86; Instructor in Physics and Chemistry, Englewood (Ill.) High School, 1888-90; Professor of Physical Science, Lake Forest University, 1890-91.

CHARLES DAVID MARX, Professor of Civil Engineering.*357 Kingsley Ave.*

B. C. E., Cornell University, 1878; C. E., Karlsruhe Polytechnicum, 1881. Instructor in Civil Engineering, Karlsruhe Polytechnicum, 1880-81; U. S. Assistant Engineer, Missouri River Improvement, 1882-84; Assistant Professor of Civil Engineering, Cornell University, 1884-90; Professor of Civil Engineering, University of Wisconsin, 1890-91.

CHARLES HENRY GILBERT, Professor of Zoology.*433 Melville Ave.*

B. S., Butler University, 1879; M. S., Indiana University, 1882, Ph. D., 1883. Assistant in Natural Sciences and Modern Languages, Indiana University, 1880-84; Professor of Natural History, University of Cincinnati, 1884-88; Professor of Zoology, Indiana University, 1888-91; Assistant to the U. S. Fish Commission, 1880-91.

DOUGLAS HOUGHTON CAMPBELL, Professor of Botany.*19 Salvatierra St.*

Ph. M., University of Michigan, 1882, Ph. D., 1886. Teacher of Biology, Detroit High School, 1882-86; Student at Bonn, Tübingen, and Berlin, 1886-88; Professor of Botany, Indiana University, 1888-91.

ALBERT WILLIAM SMITH, Professor of Mechanical Engineering.*430 Kingsley Ave.*

B. M. E., Cornell University, 1878, M. M. E., 1886. Machinist and Contractor with Brown & Sharp Mfg. Co., Providence, R. I., 1879-80; Machinist and Shop Foreman, Straight Line Engine Works, Syracuse, N. Y., 1880-83; Superintendent, Kingsford Foundry and Machine Works, Oswego, N. Y., 1883-86; Fellow in Mechanical Engineering, Cornell University, 1886-87, Assistant Professor, 1887-91; Professor of Machine Design, University of Wisconsin, 1891-92.

EWALD FLÜGEL, Professor of English Philology.*1153 Cowper St.*

Ph. D., University of Leipzig, 1886. Student, University of Freiburg and Leipzig, 1882-88; Privat Dozent, University of Leipzig, 1888-92.

CHARLES BENJAMIN WING, Professor of Structural Engineering.
345 Lincoln Ave.

C. E., Cornell University, 1886. Fellow in Civil Engineering, Cornell University, 1886-87, Instructor, 1887-90, Assistant Professor, 1890-91; Engineer, Pompton (N. J.) Powder Co., 1887, Phoenix Powder Co., Farmingdale, N. J., 1888; Assistant Engineer, Berlin (Conn.) Iron Bridge Co., 1889-90; Professor of Bridge and Hydraulic Engineering, University of Wisconsin, 1891-92.

FRANK ANGELL, Professor of Psychology.

1005 Bryant St.

B. S., University of Vermont, 1878; Ph. D., University of Leipzig, 1891; L. H. D., University of Vermont, 1892. Teacher in Washington (D. C.) High School, 1880-87; Assistant Professor of Psychology, Cornell University, 1891-92.

LEANDER MILLER HOSKINS, Professor of Applied Mathematics.
1027 Bryant St.

B. C. E. and B. S., University of Wisconsin, 1883, M. S. 1885, C. E. 1887. Instructor in Engineering, University of Wisconsin, 1885-89, Assistant Professor of Mechanics, 1889-91, Professor of Theoretical and Applied Mechanics, 1891-92.

ROBERT EDGAR ALLARDICE, Professor of Mathematics.

19 Salvatierra St.

A. M., University of Edinburgh, 1882. Baxter Scholar in Mathematics, University of Edinburgh, 1882-83, Drummond Scholar in Mathematics, 1883-84; Assistant Professor of Mathematics, University of Edinburgh, 1883-92.

WILLIAM RUSSELL DUDLEY, Professor of Botany.

9 Alvarado Row.

B. S., Cornell University, 1874, M. S., 1876. Student, Summer School, Penikese, 1874, Harvard University, 1876, Universities of Strassburg and Berlin, 1887-88; Instructor in Botany, Cornell University, 1872-76, Assistant Professor, 1876-92.

AUGUSTUS TABER MURRAY, Professor of Greek, and Secretary of the Faculty.
1019 Bryant St.

A. B., Haverford College, 1885; Ph. D., Johns Hopkins University, 1890. Fellow in Johns Hopkins University, 1887-88; Professor of Greek, Earlham College, 1888-90; Student, Universities of Leipzig and Berlin, 1890-91; Professor of Greek, Colorado College, 1891-92.

JULIUS GOEBEL, Professor of Germanic Literature and Philology.
1247 Cowper St.

Ph. D., University of Tübingen, 1882. Student, University of Leipzig, 1879-81; Instructor in German, Johns Hopkins University, 1885-88; Editor *Belletristisches Journal*, 1888-92.

NATHAN ABBOTT, Professor of Law.

318 Lincoln Ave.

A. B., Yale University, 1877; LL. B., Boston University, 1893. Professor of Law, University of Michigan, 1891-92; Professor of Law, Northwestern University, 1892-94.

JOHN ERNST MATZKE, Professor of Romanic Languages.*1211 Bryant St.*

A. B., Hope College, 1882; Ph. D., Johns Hopkins University, 1888. Professor of French, Bowdoin College 1889-90; Professor of the Romanic Languages, Indiana University, 1890-91; Associate in the Romanic Languages, Johns Hopkins University, 1891-93.

JAMES OWEN GRIFFIN, Professor of German.*14 Alvarado Row.*

Graduate of the Pennsylvania State Normal School, 1873. Teacher in Pennsylvania State Normal School, 1873-74; Principal, Unadilla (N. Y.) Academy, 1874-79; Student, University of Göttingen, 1879-80; Principal of Delaware Academy (Delhi, N. Y.), 1880-85; Instructor in German, Cornell University, 1885-91, Registrar, 1890-91.

RUFUS LOT GREEN, Professor of Mathematics.*13 Salvatierra St.*

B. S., Indiana University, 1885, A. M., 1890. Instructor in Mathematics, Indiana University, 1885-86; Student, Johns Hopkins University, 1886-87; Professor of Pure Mathematics, Indiana University, 1887-93.

ARLEY BARTHLOW SHOW, Professor of Mediæval History.*353 Melville Ave.*

A. B., Doane College, 1882; Graduate, Andover Theological Seminary, 1885; A. M., Doane College, 1892. Pastor, Congregational Church, Waco, Neb., 1885-87; Professor of History and English Literature, Doane College, 1887-92; Student, University of Leipzig, 1900-01.

ORRIN LESLIE ELLIOTT, Registrar.*12 Alvarado Row.*

Ph. B., Cornell University, 1885, Ph. D., 1890. Fellow in History and Political Science, Cornell University, 1885-86, Instructor in English, 1886-91, Assistant Registrar and President's Secretary, 1890-91.

VERNON LYMAN KELLOGG, Professor of Entomology.*19 Salvatierra St.*

B. S., University of Kansas, 1889, M. S., 1892. Student, Cornell University 1891, University of Leipzig, 1893; Assistant Professor of Entomology, University of Kansas, 1890-93, Associate Professor, 1893-94.

JAMES PERRIN SMITH, Professor of Mineralogy and Paleontology.*1035 Bryant St.*

A. M., Vanderbilt University, 1886; Ph. D., University of Göttingen, 1892. Assistant Geologist and Chemist, Arkansas Geological Survey, 1887-90.

LIONEL REMOND LENOX, Professor of Analytical Chemistry.*Castro.*

Ph. B., Columbia College, 1888. Assistant Chemist, Pethlehem Iron Co., 1887; Instructor in Chemistry, Lehigh University, 1888-91; Chemist, Ordnance Department, U. S. N., Washington, D. C., 1891-92.

Faculty and Other Officers

11

***HENRY RUSHTON FAIRCLOUGH, Professor of Latin.**

[In Europe.]

A. B., University of Toronto, 1882; A. M., 1886; Ph. D., Johns Hopkins University, 1888; Fellow in Classics, University College, Toronto, 1885-84; Classical and English Master, Brockville High School, 1884-86; Graduate Scholar, Johns Hopkins University, 1885-87; Fellow, 1887; Lecturer in Greek and Ancient History, University College, Toronto, 1887-93.

MAX FARRAND, Professor of History.

139 Racine Hall.

A. B., Princeton University, 1892; A. M., 1893; Ph. D., 1896; Boufford Fellow in History, Princeton University, 1892-93; Fellow in Social Science, 1893-94; Student, Universities of Leipzig and Heidelberg, 1894-96; Instructor in History, Wesleyan University, 1896-98; Associate Professor, 1898-99; Professor, 1899-1901.

RICHARD HEBER NEWTON, Select Preacher to the University and Pastor of the Memorial Church.

17 Alvarado Row.

University of Pennsylvania and Philadelphia Divinity School; D. D., Union Theological Seminary; Assistant in St. Paul's Church and Church of the Epiphany, Philadelphia; Rector of Trinity Church, Sharon Springs, N. Y., 1863-66; Rector of St. Paul's Church, Philadelphia, 1866-69; Rector of All Souls' Church, New York, 1869-1892.

ALPHONSO GERALD NEWCOMER, Associate Professor of English.

Forest Court.

A. B., University of Michigan, 1887; A. M., Cornell University, 1888; Fellow in Classics, Cornell University, 1887-88; Principal, Mt. Morris (Ill.) H. S., 1888-89; Instructor in Latin and French, Knox College, 1889-91.

ARTHUR BRIDGMAN CLARK, Associate Professor of Drawing.

College Terrace.

B. Ar., Syracuse University, 1888; M. Ar., 1891; Director of Trade Schools and Instructor in Drawing, New York State Reformatory, Elmira, N. Y., 1888-89; Instructor in Architecture, Syracuse University, 1889-92.

***FRANK MACE McFARLAND, Associate Professor of Histology.**

[In Europe.]

Ph. B., De Pauw University, 1889; A. M., Leland Stanford Jr. University, 1893; Ph. D., University of Würzburg, 1896; Assistant in Biology, De Pauw University, 1888-89; Professor of Biology, Oliver College, 1889-92; Student, Würzburg, Zürich, and Naples, 1894-96.

GEORGE CLINTON PRICE, Associate Professor of Zoology.

5 Malvaterre St.

B. S., De Pauw University, 1890; Ph. D., Leland Stanford Jr. University, 1897; Student in Biology, Johns Hopkins University, 1890-92; University of Munich, 1895-96.

*Absent on leave, 1902-03.

**JOHN CHARLES LOUNSBURY FISH, Associate Professor of
Civil Engineering.** *382 Lincoln Ave.*

C. E., Cornell University, 1892. Instructor in Civil Engineering, Cornell University, 1892-93.

**ELLWOOD P. CUBBERLEY, Associate Professor of Educa-
tion.** *7 Salvatierra St.*

A. B., Indiana University, 1891; A. M., Columbia University, 1902. Professor of Physical Science, Vincennes University (Ind.), 1891-93, President, 1893-96; Superintendent of City Schools, San Diego, Cal., 1896-98.

**MARY ROBERTS SMITH, Associate Professor of Social Sci-
ence.** *430 Kingsley Ave.*

Ph. B., Cornell University, 1880, M. S., 1882; Ph. D., Leland Stanford Jr. University, 1896. Teacher of History, Washington, D. C., High School, 1882-84; Teacher of History, Private School, Cincinnati, O., 1884-86; Instructor in History and Economics, Wellesley College, 1886-90, Registrar and Secretary of Board of Examiners, 1889-90.

**GUIDO HUGO MARX, Associate Professor of Mechanical En-
gineering.** *356 Lincoln Ave.*

M. E., Cornell University, 1893. With Gleason Tool Co., Rochester, N. Y., 1893-94; with Bement, Miles & Co., Philadelphia, 1894-95.

**CLYDE AUGUSTUS DUNIWAY, Associate Professor of His-
tory.** *471 Addison Ave.*

A. B., Cornell University, 1892; A. M., Harvard University, 1894, Ph. D., 1897. Instructor in History, Harvard University and Radcliffe College, 1896-97.

GEORGE ARCHIBALD CLARK, Secretary to the University. *7 Alvarado Row.*

B. L., University of Minnesota, 1891. Secretary, U. S. Fur Seal Commission, 1896-98.

**GEORGE JAMES PEIRCE, Associate Professor of Botany and
Plant Physiology.** *943 Bryant St.*

B. S., Harvard University, 1890; Ph. D., University of Leipzig, 1894. Assistant in Botany, Harvard University and Radcliffe College, 1890-92; Parker Fellow in Harvard University, studying in Bonn, Leipzig, and Munich, 1892-94; Assistant Professor of Botany, Indiana University, 1895-97.

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Physics.** *3 Salvatierra St.*

A. B., Leland Stanford Jr. University, 1892, A. M., 1893. Student, University of Berlin, 1897-98.

OLIVER MARTIN JOHNSTON, Associate Professor of Romanic Languages.
4 Alvarado Row.

A. B., Mississippi College, 1890; A. M., 1892; Ph. D., Johns Hopkins University, 1896. Principal, Preparatory Department, Mississippi College, 1890-91. Professor of English and History, 1891-93; Fellow in Johns Hopkins University, 1895-96; Lecturer in French Philology, Bryn Mawr College, 1896-97.

STEWART WOODFORD YOUNG, Associate Professor of Chemistry.
19 Salatierra St.

B. S., Cornell University, 1890. Assistant in Chemistry, Cornell University, 1890-91; Instructor in Chemistry, Swarthmore College, 1891-93.

MELVIN GILBERT DODGE, Associate Librarian.

6 Alvarado Row.

A. B., Hamilton College, 1890; A. M., 1894. Librarian, Hamilton College, 1892-1901.

JOHN FLESHER NEWSOM, Associate Professor of Mining and Metallurgy.
10 Alvarado Row.

A. B., Indiana University, 1891; A. M., Leland Stanford Jr. University, 1893; Ph. D., 1901. Assistant, Arkansas Geological Survey, 1891-93; Instructor in Geology, Indiana University, 1894-96; Assistant Professor, 1896-98.

EPHRAIM DOUGLASS ADAMS, Associate Professor of History.
3 Alvarado Row.

A. B., University of Michigan, 1887; Ph. D., 1890. Principal of High School, McGregor, Ia., 1887; Principal of High School, Saginaw, Mich., 1889; Special Agent in Charge of Street Railways, Eleventh Census, Washington, D. C., 1890; Assistant Professor and afterward Professor of European History, University of Kansas, 1891-1902.

SIMON JAMES McLEAN, Associate Professor of Economics.

401 Addison Ave.

A. B., University of Toronto, 1894; LL. B., 1895; A. M., Columbia University, 1896; Ph. D., University of Chicago, 1897. Ramsey Postgraduate Scholar in Economics, University of Toronto, 1894; Mackenzie Fellow in Political Science, 1894-95; Examiner in Economics and Constitutional History, 1895-97; Fellow in Economics and Sociology, Columbia University, 1895-96; Fellow in Economics, University of Chicago, 1896-97; Professor of Economics and Sociology, University of Arkansas, 1897-1902; Advisory Work for Department of Railways and Canals, Canada, 1898-99; Special Commissioner on Railway Rate Grievances, 1901.

HENRY WINCHESTER ROLFE, Associate Professor of Greek.

Lincoln Ave. and Ramona St.

A. B., Amherst College, 1880; A. M., 1885. Student, University of Leipzig, 1881-83; Instructor in English, Cornell University, 1883-85; Professor of Latin, Swarthmore College, 1885-90; Lecturer on Latin Literature to Postgraduate Students, University of Pennsylvania, 1891-94; University Extension Lecturer, 1891-1900.

DAVID CHARLES GARDNER, Chaplain of the University
Memorial Church. 1A Alvarado Row.

Scholar, Lord Scudamore's School, Hereford, England; Student under Farquhar McKerrrow, Usk Grammar School, Monmouthshire, England; Graduate, Church Divinity School of the Pacific, San Mateo, 1897; Curate, St. James Mission, San Francisco, 1898; Rector of All Saints' Church, Palo Alto, 1898-1902.

***EDWARD CURTIS FRANKLIN, Associate Professor of Organic Chemistry.**

B. S., University of Kansas, 1888, M. S., 1890; Ph. D., Johns Hopkins University, 1894. Chemist to the Palo Alto Plantation and Sugar Factory, Donaldsville, Ga., 1888; Chemist to the Bella Vista Mining and Milling Co., Los Quemados, Costa Rica, 1897; Instructor in Chemistry, University of Kansas, 1888-90; Student at Berlin, 1890-91; Assistant in Chemistry, University of Kansas, 1891-93, Associate Professor, 1894-99, Professor of Physical Chemistry, 1899-1903.

HAROLD HEATH, Associate Professor of Zoology.

711 Cowper St.

A. B., Ohio Wesleyan University, 1893; Ph. D., University of Pennsylvania, 1898. Assistant in Biology, Ohio Wesleyan University, 1891-93; Professor of Biology, University of the Pacific, 1893-94; Harrison Fellow in Zoology, University of Pennsylvania, 1896-98.

GEORGE ABRAM MILLER, Associate Professor of Mathematics.

160 Encina Hall.

A. B., Muhlenberg College, 1887; Ph. D., Cumberland University, 1892. Professor of Mathematics, Eureka College, 1888-93; Instructor in Mathematics, University of Michigan, 1893-95; Student, Universities of Leipzig and Paris, 1895-97; Instructor in Mathematics, Cornell University, 1897-1901; Instructor in Mathematics, University of Chicago, summer session, 1898.

CHARLES HENRY RIEBER, Associate Professor of Philosophy.

1146 Waverly St.

A. B., University of California, 1888; A. M., Harvard University, 1899, Ph. D., 1900. Principal of Schools, Placerville, Cal., 1889-91; Master, Mathematics, Belmont School, 1891-98; Assistant in Philosophy, Harvard University, 1898-1901.

KARL G. RENDTORFF, Assistant Professor of German.

827 Middlefield Road.

A. M., Leland Stanford Jr. University, 1894, Ph. D., 1896. Student, University of Giessen, 1884-85, University of Kiel, 1885-91.

EDWIN DILLER STARBUCK, Assistant Professor of Education.

360 Kingsley Ave.

A. B., Indiana University, 1890; A. M., Harvard University, 1895; Ph. D., Clark University, 1897. Teacher of Mathematics and Latin, Spiceland (Ind.) Academy, 1890-91; Professor of Mathematics, Vincennes (Ind.) University, 1891-93; Fellow in Psychology, Clark University, 1895-97.

*Beginning August, 1903.

SAMUEL JACKSON BARNETT, Assistant Professor of Physics.
5 Alvarado Row.

A. B., University of Denver, 1894; Ph. D., Cornell University, 1898. Instructor in Physics and Biology, University of Denver, 1894-95; Assistant in Astronomical Observatory, University of Virginia, 1895-96, and Instructor in Astronomy, 1896; University Scholar and Fellow in Physics, Cornell University, 1896-98; Instructor and afterward Professor of Physics, Colorado College, 1898-1900.

CHARLES ROSS LEWERS, Assistant Professor of Law.
8 Salvatierra St.

A. B., University of Nevada, 1893; A. B., Leland Stanford Jr. University, 1896; LL. B., Harvard University, 1899.

RAY LYMAN WILBUR, Assistant Professor of Physiology.
11 Alvarado Row.

A. B., Leland Stanford Jr. University, 1896. A. M., 1897; M. D., Cooper Medical College, 1899. Instructor and Demonstrator in Physiology, Cooper Medical College, 1899-1900.

PIERRE JOSEPH FREIN, Assistant Professor of Romanic Languages.
727 Cowper St.

A. B., Williams College, 1892; Ph. D., Johns Hopkins University, 1899. Instructor in French and Greek, Oahu College, 1893-95; Fellow in Johns Hopkins University, 1898-99.

FREDERICK JOHN ROGERS, Assistant Professor of Physics.
533 Middlefield Road.

M. S., Cornell University, 1891. Instructor in Physics, Cornell University, 1892-1900.

LILLIEN JANE MARTIN, Assistant Professor of Psychology.
15 Salvatierra St.

A. B., Vassar, College, 1880. Teacher of Science, Indianapolis High School, 1880-89; Vice-Principal and Head of Department of Science, Girls' High School, San Francisco, 1889-94; Student, University of Göttingen, 1894-98.

HANS FREDERICK BLICHFELDT, Assistant Professor of Mathematics.
College Terrace.

A. B., Leland Stanford Jr. University, 1896; Ph. D., University of Leipzig, 1898.

MARATHON MONTROSE RAMSEY, Assistant Professor of Spanish.
14 Lasuen St.

B. S., Columbian University, 1894. A. M., 1895. Instructor in Spanish, Columbian University, 1894-96, Professor of Romanic Languages, 1896-1900; Fellow by Courtesy, Johns Hopkins University, 1900-01.

COLBERT SEARLES, Assistant Professor of Romanic Languages.
5 Alvarado Row.

A. B., Wesleyan University, 1895; Ph. D., University of Leipzig, 1899. Instructor in French and Italian, Indiana University, 1899-1900; Associate Professor of English and Modern Languages, University of Arkansas, 1900-01.

RAYMOND MACDONALD ALDEN, Assistant Professor of English Literature and Rhetoric.
611 Waverly St.

A. B., University of Pennsylvania, 1894; A. M., Harvard University, 1896; Ph. D., University of Pennsylvania, 1898. Instructor in English, Columbian University, Washington, D. C., 1894-95; Assistant in English, Harvard University, 1896-97; Senior Fellow in English, University of Pennsylvania, 1898-99, Instructor, 1899-1901.

WILLIAM ALPHA COOPER, Assistant Professor of German.
334 Homer Ave.

A. B., Marietta College, 1892, A. M., 1897. Student, Universities of Bonn, Leipzig, and Paris, 1892-94; Instructor in German and French, Marietta College, 1895-99, Professor, 1899-1901.

WILLIAM FREEMAN SNOW, Assistant Professor of Hygiene.
9 Salvatierra St.

A. B., Leland Stanford Jr. University, 1896; A. M., 1897; M. D., Cooper Medical College, 1900. Student, Johns Hopkins Medical School, 1901-02.

ANDREW ALLEN BROWNE, Assistant Professor of Mechanic Arts, and Superintendent of Shops.

Bryant St. and Addison Ave.

Student, University of Michigan, 1888-90; Teacher, Chicago English High and Manual Training School, 1890-97; Machinist Contractor, Monterey, Mexico, 1897-1900; with Mexican Lead Company, 1900-02.

FRANK GEORGE BAUM, Assistant Professor of Electrical Engineering.
259 Hawthorne Ave.

A. B., Leland Stanford Jr. University, 1898, E. E., 1899.

GEORGE FREDERICK MADDOCK, Assistant Professor of Mechanical Engineering.
637 Gilman St.

A. B., Leland Stanford Jr. University, 1900.

***THOMAS ANDREW STOREY, Assistant Professor of Hygiene.**
[Boston, Mass.]

A. B., Leland Stanford University, 1896, A. M., 1900, Ph. D., 1902.

JEFFERSON ELMORE, Assistant Professor of Latin.

543 Middlefield Road.

A. B., Leland Stanford Jr. University, 1895, A. M., 1895, Ph. D., 1901. Principal of Merced County High School, 1895-97; Student, Universities of Bonn and Berlin, 1901-02.

*Absent on leave, 1902-03.

JOHN ELLWOOD BLAIR, Assistant Professor of Law.

161 Encina Hall.

A. B., Mercersburg College, 1891; LL. B., Harvard University, 1898. Student, Boston University Law School, 1894-95; Graduate Student, Harvard Law School, 1898-99; Assistant Dean and Professor of Law, University of North Dakota, 1899-1902.

JOHN OTTERBEIN SNYDER, Assistant Professor of Zoology.

Cowper St.

A. B., Leland Stanford Jr. University, 1897, A. M., 1899.

ROBERT ECKLES SWAIN, Assistant Professor of Chemistry.

638 Channing Ave.

A. B., Leland Stanford Jr. University, 1899; M. S., Yale University, 1901.

DAVID SAMUEL SNEDDEN, Assistant Professor of Education.

14 Salvatierra St.

A. B., St. Vincent's College, Los Angeles, 1890; A. B., Leland Stanford Jr. University, 1897; A. M., Columbia University, 1901. Principal of Schools, Santa Paula, Cal., 1892-93; Principal of High School, Paso Robles, Cal., 1897-1900.

†HARRY ALVIN MILLIS, Assistant Professor of Economics.

A. B., Indiana University, 1895, A. M., 1896; Ph. D., University of Chicago, 1899. Reference Librarian, John Crerar Library, Chicago, 1899-1902; Professor of Economics and Sociology, University of Arkansas, 1902-03.

GEORGE LOFTUS NOYES, Assistant Professor of Drawing.

Kingsley Ave.

Art Student, Collorossi and Delacluse Académies, Paris, 1889-93; Exhibitor in Paris Salon, 1892, Society of American Artists, 1896, Boston Art Club, 1893-1902.

JOHN EZRA McDOWELL, Assistant Registrar.

6 Lasuen St.

A. B., Leland Stanford Jr. University, 1900.

JULIUS EMBRET PETERSON, Foreman of the Forge.

660 Homer Ave.

EUGENE SOULE, Foreman of the Manual Training Shop.

633 Lytton Ave.

CLARA S. STOLTENBERG, Instructor in Physiology.

10 Alvarado Row.

A. B., Leland Stanford Jr. University, 1896, A. M., 1897.

†Beginning August, 1903.

EDWIN CHAPIN STARKS, Curator in Zoology.*611 Gilman St.*

Assistant in United States Bureau of Biological Survey, 1897-99; Curator of the Museum, University of Washington, 1899-1900.

SAMUEL SWAYZE SEWARD, Jr., Instructor in English.*431 University Ave.*

A. B., Columbia College, 1896; A. M., Columbia University, 1897. Scholar in Literature, Columbia University, 1896-97, Assistant in Literature, 1897-99; Student, Oxford University, 1899-1900.

LEE EMERSON BASSETT, Instructor in Elocution.*8 Alvarado Row.*

A. B., Leland Stanford Jr. University, 1901. Graduate Cumneck School of Oratory, Los Angeles, 1898; Instructor in Public Speaking, University of Southern California, 1898-99; Instructor in Elocution, Long Beach, Cal., summer school, 1898; Student, School of Expression, Boston, 1901.

WILLIAM JONATHAN NEIDIG, Instructor in English.*8 Alvarado Row.*

A. B., Leland Stanford Jr. University, 1896.

ALVIN JOSEPH COX, Instructor in Chemistry.[In Europe.]*

A. B., Leland Stanford Jr. University, 1901, A. M., 1902.

CHARLES FREDERICK SCHMUTZLER, Instructor in German.*219 Ramona St.*

A. B., Leland Stanford Jr. University, 1898, A. M., 1899.

EDWARD KIRBY PUTNAM, Instructor in English.*14 Alvarado Row.*

A. B., Illinois College, 1891; A. M., Harvard University, 1899. Student, University of Chicago, 1894-96.

JAMES TAYLOR BURCHAM, Instructor in Law.*379 Everett Ave.*

A. B., Leland Stanford Jr. University, 1897, LL. B., 1901.

HALCOTT CADWALADER MORENO, Instructor in Applied Mathematics.*650 Waverly St.*

A. B., University of Georgia, 1893, A. M., 1894, B. L., 1896; Ph. D., Clark University, 1900. Tutor in Mathematics, University of Georgia, 1893-97; Scholar and Fellow in Mathematics, Clark University, 1897-1900; Assistant in Mathematics, Clark University, 1900-01.

*Absent on leave, 1902-03.

BENJAMIN OLIVER FOSTER, Instructor in Latin.

334 Homer Ave.

A. B., Leland Stanford Jr. University, 1895; A. M., Harvard University, 1897, Ph. D., 1899. Parker Fellow of Harvard University, studying in the American School of Classical Studies in Rome, 1899-1900; Acting Professor of Latin and Greek, State Normal College of Michigan, 1900-01.

ALBERT CONSER WHITAKER, Instructor in Economics.

2 Salvatierra St.

A. B., Leland Stanford Jr. University, 1899. Scholar in Economics, Columbia University, 1899-1900, Fellow, 1900-01; Student, University of Berlin, 1901-02.

EDWIN BINGHAM COPELAND, Instructor in Bionomics.

334 Lincoln Ave.

A. B., Leland Stanford Jr. University, 1895; Ph. D., University of Halle, 1896. Assistant in Biology, University of Wisconsin, 1893-94, Honorary Fellow in Botany, 1896-97; Assistant Professor of Botany, Indiana University, 1897-98; Teacher of Science, Chico (Cal.) State Normal School, 1899; Professor of Botany, University of West Virginia, 1899-1901.

EDWARD JOHN STANLEY, Instructor in Pattern Making and Foundry Work.

550 Addison St.

Machinist with Pacific Iron Works, San Francisco, 1878-79, Pattern Maker, 1880-86; Foreman, Pattern Shop, Union Iron Works, San Francisco, 1886-1901.

JOSEPH GRANT BROWN, Instructor in Physics.

411 Lytton Ave.

A. B., Leland Stanford Jr. University, 1901.

CEPHAS DANIEL ALLIN, Instructor in Economics.

363 Melville Ave.

A. B., University of Toronto, 1895, LL. B., 1889; A. M., Harvard University, 1900.

ANSTRUTHER ABERCROMBIE LAWSON, Instructor in Botany.

17 Salvatierra St.

B. S., University of California, 1897, M. S., 1898; Ph. D., University of Chicago, 1901. Fellow in Botany, University of Chicago, 1900-01.

ERNEST WHITNEY MARTIN, Instructor in Latin.

129 Emerson St.

A. B., University of Chicago, 1900; A. M., Leland Stanford Jr. University, 1902. Student, University of Berlin and American School of Classical Studies, Rome, 1900-01.

***ROBERT EVANS SNODGRASS, Instructor in Entomology.**

A. B., Leland Stanford Jr. University, 1901. Assistant Entomologist, Washington State Agricultural College, and Experiment Station. 1901-03.

*Beginning August, 1903.

GEORGE CRAM COOK, Instructor in English.

1 Salvatierra St.

A. B., University of Iowa, 1892; A. B., Harvard University, 1893. Fellow in English, University of Iowa, 1892; Student, University of Heidelberg, 1894, University of Geneva, 1894-95; Instructor in English, University of Iowa, 1895-90.

GEORGE LUTHER CLARK, Instructor in Law.

375 Everett Ave.

A. B., Kenyon College, 1896; LL. B., Indiana University, 1899. Student, Harvard Law School, 1900-02.

NEWTON CLEAVELAND, Instructor in Physiology.

565 Hamilton Ave.

A. B., Leland Stanford Jr. University, 1899.

HALBERT WILLIAM CHAPPELL, Instructor in Hygiene.

78 Encina Hall.

A. B., Leland Stanford Jr. University, 1901.

STELLA ROSE, Instructor in Hygiene.

1 Salvatierra St.

A. B., Leland Stanford Jr. University, 1900.

FLORENCE BOLTON, Instructor in Hygiene.

1 Salvatierra St.

JAMES BENNETT LIGGETT, Foreman of the Foundry.

Kingsley Ave.

Apprentice and Foundry Moulder, Falls Rivet and Machine Co., Cuyahoga Falls, O., 1883-88; Webster, Camp & Lane, Akron, O., 1888-93; Bowler & Co., Cleveland, O., 1893-98; Foundry Foreman, City Foundry Co., Cleveland, O., 1898-99; Foreman, Born Steel Range Co., Cleveland, O., 1899-1902; Foreman of Foundry, Westinghouse Electric Co., Cleveland, O., 1892.

DORSEY ALFRED LYON, Instructor in Metallurgy.

18 Salvatierra St.

A. B., Leland Stanford Jr. University, 1898; A. M., Harvard University, 1902. Assistant in Chemistry, Leland Stanford Jr. University, 1897-98; Instructor in Geology, University of Washington, 1898-99; Assistant Professor of Mining and Metallurgy, 1899-1900; Professor of Mining and Metallurgy and Dean of the School of Mines, 1900-01; Graduate Student, Harvard University, 1901-02; with United States Smelting Co., Utah, 1902.

WILLIAM ALBERT MANNING, Instructor in Mathematics.

650 Waverly St.

A. B., Williamette University, 1900; A. M., Leland Stanford Jr. University, 1902

***HENRY LEWIN CANNON, Instructor in History.**

A. B., Western Reserve University, 1893; Ph. D., University of Pennsylvania, 1898. Student, Harvard University, 1893-94, Yale University, 1896-97; Fellow in European History, University of Pennsylvania, 1897-98; Instructor in History, University of Cincinnati, 1900-03.

†ANTHONY HENRY SUZZALLO, Instructor in Education.

[*San Francisco.*]

A. B., Leland Stanford Jr. University, 1899; A. M., Columbia University, 1902. Principal of Schools, Alviso, Cal., 1896-97; Principal, Longfellow Grammar School, Alameda, Cal., 1899-1901; Instructor, San Francisco State Normal School, 1902-03.

SUSAN BROWN BRISTOL, Assistant to the Registrar, and Secretary of Committee on Recommendation of Teachers.

13 Salvatierra St.

A. B., Leland Stanford Jr. University, 1897.

***WALTER CLARK, President's Stenographer.**

A. B. Leland Stanford Jr. University, 1890.

LE ROY ABRAMS, Instructor in Systematic Botany.

9 Alvarado Row.

A. B., Leland Stanford Jr. University, 1899.

ANTON JULIUS CARLSON, Assistant in Physiology.

167 Encina Hall.

A. B., Augustana College, 1898, A. M., 1899; Ph. D., Leland Stanford Jr. University, 1903.

CLIFFORD GILMORE ALLEN, Assistant in Romance Languages.

422 Tasso St.

A. B., Boston University, 1900.

ADOLPH KARL VON NOÉ, Assistant in German.

1245 Waverly St.

A. B., University of Chicago, 1900. Abiturientenexamen, Graz (Austria), 1893; Student, University of Graz, 1895-97, University of Göttingen, 1897-99; Instructor in German and French, Burlington (Ia.) Institute, and University of Chicago Extension Reader, 1900-01.

CHLOE LESLEY STARKS, Assistant in Drawing.

611 Gilman St.

RUBY GREEN BELL, Assistant in Entomology.

5 Lasuen St.

A. B., Leland Stanford Jr. University, 1902.

JOHN FLETCHER BYXBEE, JR., Assistant in Civil Engineering.

347 Alma St.

A. B., Leland Stanford Jr. University, 1902.

*Beginning August, 1903.

†Absent on leave.

ADOLPH DANIEL EDWARD ELMER, Assistant in Systematic Botany. *427 Lytton Ave.*

B. S., Washington Agricultural College, 1899.

CHARLOTTE MABLE LORD, Assistant in History. *526 Waverly St.*

A. B., Leland Stanford Jr. University, 1902.

WESLEY ROBERTSON LONG, Assistant in Romanic Languages. *5 Alvarado Row.*

A. B., Boston University, 1902.

ROBERT HUGHES GAITHER, Assistant in Mechanical Engineering. *12 Encina Hall.*

*JOSEPH JARNICK, Assistant in Latin.

A. B., Leland Stanford Jr. University, 1900, A. M., 1901.

WALTER KENRICK FISHER, Assistant in Zoology. *411 Waverly St.*

A. B., Leland Stanford Jr. University, 1901.

ARION SIEGFRIED KALENBORN, Assistant in Electrical Engineering. *75 Encina Hall.*

A. B., Leland Stanford Jr. University, 1903.

JOHN PEARCE MITCHELL, Assistant in Chemistry. *951 Bryant St.*

A. B., Leland Stanford Jr. University, 1903.

ELIAS OLAN JAMES, Assistant in English. *103 Encina Hall.*

A. B., Union Christian College, 1899; A. B., Leland Stanford Jr. University, 1902.

P. HJALMAR OLSSON-SEFFER, Assistant in Systematic Botany. *199 Encina Hall.*

Universities of Helsingfors and Upsala.

TOM MARIE ALDERSON, Assistant in Law Library. *Mayfield.*

A. B., Leland Stanford Jr. University, 1902.

CHARLES BRADLEY HUDSON, Assistant Artist of the Hopkins Laboratory. *Palo Alto.*

*First Semester, 1902-03.

WILLIAM SACKSTON ATKINSON, Assistant Artist of the
Hopkins Laboratory. *Palo Alto.*

A. B., Leland Stanford Jr. University, 1899.

KAKO MORITA, Assistant Artist. *Encina Hall.*

Graduate in Art, Imperial University of Tokyo.

SEKKO SHIMADA, Assistant Artist. *Encina Hall.*

Graduate in Art, Imperial University of Tokyo.

MARY WELLMAN, Artist in Entomology.
11 Salvatierra St.

FLORENCE HUGHES, Cataloguer. *1245 Waverly St.*

LILLIAN PEARL GREEN, Library Assistant.
5 Lasuen St.

A. B., Leland Stanford Jr. University, 1898.

ALICE NEWMAN HAYS, Library Assistant.
9 Salvatierra St.

A. B., Leland Stanford Jr. University, 1896.

HARROLD TRADER, Library Assistant. *16 Salvatierra St.*

A. B., Leland Stanford Jr. University, 1902.

EDWARD PLAYFAIR ANDERSON, Library Assistant.
667 Channing Ave.

A. M., University of Michigan, 1879, Ph. D., 1886. Professor of English Literature and History, Ohio University, 1888-89; Professor of English and Modern Languages, Michigan Agricultural College, 1889-90; Professor of French and German, Miami University, 1891-96; Teacher in the Washburn School, San Jose, 1897-1901.

MARY DRANGA GRAEBE, Library Assistant.
1022 Waverly St.

MARTHA ELIZABETH HAVEN, Library Assistant.
9 Salvatierra St.

A. B., Leland Stanford Jr. University, 1896.

BELLE HEBER THOMPSON, Library Assistant.
327 Hamilton Ave.

HARRY C. PETERSON, Curator of the Leland Stanford Junior
Museum. *660 Homer Ave.*

LILLIAN EMELINE RAY, Mistress of Roble Hall.
Roble Hall.

A. B., Leland Stanford Jr. University, 1897, A. M., 1901,

CHARLES G. LATHROP, Treasurer of the University.

Alta Vista.

HENRY M. COPELAND, Bookkeeper.

San Francisco.

A. C. LASSEN, Bookkeeper.

Encina Hall.

SAMUEL H. RICH, Bookkeeper.

San Francisco.

B. P. SHARON, Stenographer.

San Mateo.

P. Q. ATKINSON, Custodian.

Stanford University

CHARLES EDWARD HODGES, Resident Architect.

Pine Cottage.

With N. S. Joseph & Pearson, Architects, London, 1884-88; Student, Westminster and South Kensington Architect Schools, 1884-88; Draughtsman to Shepley, Rutan & Coolidge, Architects, 1888-91; Member American Institute of Architects, Washington, D. C., September, 1900.

VINCENT KROLOW, Draughtsman to the Architect.

College Terrace.

C. P. HUGHES, Chief Engineer.

Palo Alto.

J. MCGLYNN, Assistant Engineer.

Menlo Park.

R. A. STEVENS, Electrician.

Palo Alto.

GEORGE ADDERSON, Overseer of Buildings.

Encina Hall.

E. R. EWELL, Custodian of Chemistry Building.

Palo Alto.

CHARLES F. MOORE, University Plumber.

Menlo Park.

M. H. DORGAN, University Plumber.

Mayfield.

CHARLES C. WALLEY, University Carpenter.

Mayfield.

LECTURER

CHARLES REYNOLDS BROWN, Lecturer on Ethics.

322 Twenty-second St., Oakland.

A. B., University of Iowa, 1883, A. M., 1886; S. T. B., Boston University School of Theology, 1889. Pastor, Wesley Chapel, Cincinnati, 1889-92; Pastor Winthrop Church, Boston, 1892-96; Student, Harvard University, 1893-94; Pastor, First Congregational Church, Oakland, since 1896.

ADMINISTRATIVE OFFICERS

THE UNIVERSITY

President: DAVID STARR JORDAN.
Vice-President: JOHN CASPER BRANNER.
Registrar: ORRIN LESLIE ELLIOTT.
Librarian: MELVIN GILBERT DODGE.*
Secretary: GEORGE ARCHIBALD CLARK.

DEPARTMENT COUNCILS

(Senior Professors.)

Greek: AUGUSTUS TABER MURRAY.
Latin: HENRY RUSHTON FAIRCLOUGH.
Germanic Languages: JULIUS GOEBEL.
Romanic Languages: JOHN ERNST MATZKE.
English Literature and Rhetoric: MELVILLE BEST ANDERSON.
English Philology: EWALD FLÜGEL.
Philosophy: CHARLES HENRY RIEBER.*
Psychology: FRANK ANGELL.
Education: ELLWOOD P. CUBBERLEY.
History: MAX FARRAND.
Economics and Sociology: SIMON JAMES McLEAN.*
Law: NATHAN ABBOTT.
Drawing and Painting: ARTHUR BRIDGMAN CLARK.
Mathematics: ROBERT EDGAR ALLARDICE.
Physics: FERNANDO SANFORD.
Chemistry: JOHN MAXSON STILLMAN.
General Botany: DOUGLAS HOUGHTON CAMPBELL.
Systematic Botany: WILLIAM RUSSELL DUDLEY.
Hygiene and Organic Training: WILLIAM FREEMAN SNOW.*
Physiology and Histology: OLIVER PEEBLES JENKINS.
Zoology: CHARLES HENRY GILBERT.
Entomology: VERNON LYMAN KELLOGG.
Geology and Mining: JOHN CASPER BRANNER.
Civil Engineering: CHARLES DAVID MARK.
Mechanical Engineering: ALBERT WILLIAM SMITH.
Electrical Engineering: ALBERT WILLIAM SMITH.*

*Acting.

STANDING COMMITTEES

The Vice-President is Chairman of the Committee on Ways and Means and Acting President during the absence of the President.

The Registrar is ex-officio Chairman of the Committees on Admission and Advanced Standing, Registration, Graduation, and Recommendation of Teachers.

Ways and Means: BRANNER, STILLMAN, C. D. MARX, MURRAY, CAMPBELL.

Student Affairs: GREEN, GRIFFIN, SANFORD, BRANNER, JENKINS.

Admission and Advanced Standing: ELLIOTT, MATZKE, MURRAY, G. H. MARX, CUBBERLEY.

Scholarship: GILBERT, MURRAY, HOSKINS, LENOX, ELLIOTT.

Registration: ELLIOTT, MATZKE, PRICE, FISII, CUBBERLEY.

Graduation: ELLIOTT, JENKINS, STILLMAN, ANDERSON, HOSKINS.

Graduate Study: FLÜGEL, BRANNER, GOEBEL, SANFORD, DUDLEY. MURRAY, ANGELL.

Library: STILLMAN, C. D. MARX, FLÜGEL, FARRAND, SHOW, DODGE.

University Publications: KELLOGG, ALLARDICE, A. W. SMITH, J. P. SMITH, ADAMS.

Athletics: ANGELL, KELLOGG, FARRAND, G. H. MARX, SNOW.

Public Exercises, Lectures, and Social Affairs: NEWCOMER, STILLMAN, G. A. CLARK, FARRAND, YOUNG.

Literary Contests: DUNIWAY, ALDEN, ROLFE, MCLEAN, BASSETT.

Recommendation of Teachers: ELLIOTT, CUBBERLEY, GOEBEL, JENKINS, SHOW, ROLFE, G. A. CLARK.

Resolutions: ANDERSON, ALDEN, JOHNSTON, ALLARDICE, CAMPBELL,

Academic Usages: A. W. SMITH, PEIRCE, NEWCOMER, ALDEN, A. B. CLARK.

Legal Matters: ABBOTT, LEWERS, DUNIWAY, MCLEAN, SANFORD.

Student Employment: M. R. SMITH, GRIFFIN, PRICE, RIERER, SNOW.

Hopkins Laboratory: PRICE, HEATH, JENKINS, GILBERT, PEIRCE.

Medical Education: JENKINS, STILLMAN, SANFORD, WILBUR, SNOW,

ORGANIZATION

Foundation

The founding, at Palo Alto, of "a university for both sexes, with the colleges, schools, seminaries of learning, mechanical institutes, museums, galleries of art, and all other things necessary and appropriate to a university of high degree," was determined upon by the Hon. Leland Stanford and Jane Lathrop Stanford, in 1884. In March of the year following the Legislature of California passed an Act providing for the administration of trust funds in connection with institutions of learning. November 14, 1885, the Grant of Endowment was publicly made in accordance with this Act, and on the same day the Board of Trustees held its first meeting, in San Francisco. The work of construction was at once begun, and the cornerstone laid May 14, 1887, the nineteenth anniversary of the birth of Leland Stanford, Jr. The University was formally opened to students October 1, 1891.

Name and Purpose

"Since the idea of establishing an institution of this kind, for the benefit of mankind, came directly and largely from our son and only child, Leland, and in the belief that had he been spared to advise as to the disposition of our estate, he would have desired the devotion of a large portion thereof to this purpose, we will that for all time to come the institution hereby founded shall bear his name, and shall be known as The Leland Stanford Junior University."

The object of the University is "to qualify students for personal success and direct usefulness in life"; its purposes, "to promote the public welfare by exercising an influence in behalf of humanity and civilization, teaching the blessings of liberty regulated by law, and inculcating love and reverence for the great principles of government as derived from the inalienable rights of man to life, liberty, and the pursuit of happiness."

Location

The University is located on the Palo Alto estate in the Santa Clara Valley, thirty-three miles southeast of San Francisco, on the Coast Division of the Southern Pacific Railway,

The estate consists of about nine thousand acres, partly level and partly rising into the foothills of the Santa Cruz Range. On the grounds are the residence of the founders and an extensive arboretum containing a great variety of shrubs and trees. The Bay of San Francisco lies about three miles east of the University buildings, and across the bay the Monte Diablo Range rises to the height of over four thousand feet. The Lick Observatory, crowning Mount Hamilton, the highest of the range, is plainly visible. To the southwest, between the valley and the ocean, is the heavily wooded Santa Cruz Range, two thousand to four thousand feet in height.

The Santa Clara Valley is one of the most attractive portions of the State in climate, in natural beauty, and in the fertility and adaptiveness of its soil to all the varied fruits of California. The characteristics of the climate are its evenness of temperature, its pure and bracing air, and its freedom alike from the fogs and harsh winds of the coast and from the oppressive summer heat of the interior valleys. In winter the mercury rarely falls below 30°, and the average midday temperature is about 55°; in summer the average midday temperature is between 75° and 80°, while the nights are always cool. The rainfall, of about fifteen inches, is chiefly confined to the months from December to April, inclusive.

Endowment

The landed endowment of the University, in addition to the Palo Alto estate, consists of the Vina estate, in Tehama County, of fifty-nine thousand acres; the Gridley estate, in Butte County, of twenty-two thousand acres; and various tracts of minor importance. The Stanford residence in San Francisco has also been deeded to the University. The main part of the University endowment, included in recent gifts of Mrs. Stanford, consists of interest-bearing securities.

Buildings

The central group of buildings constitutes two quadrangles, one surrounding the other. The INNER QUADRANGLE, with the exception of the Memorial Church, was completed in 1891. Its twelve one-story buildings and Memorial Church are connected by a continuous open arcade, facing a court 586 feet long by 246 feet wide, or three and a quarter acres. The

buildings are of buff sandstone, somewhat varied in color. The stonework is of broken ashlar, with rough rock face, and the roofs are covered with red tile. The architectural *motif* is to be found in the old Spanish Missions of California.

The OUTER QUADRANGLE was begun in 1898, the Assembly Hall, Library, and Memorial Arch being completed in 1899, and the Treasurer's Office in 1902. The remaining buildings, twelve in number, are now in process of construction and will be completed in 1904. The buildings devoted to Physiology, Zoology, Botany, English, History, Economics, Psychology, Physics, and Engineering will be occupied in 1903. The main buildings of the outer quadrangle are two stories in height above the basement, and constructed of the same material and in the same general style as the inner quadrangle. The principal façade consists of the Memorial Arch in the center with a group of three buildings on either side, the whole connected by a continuous open arcade 894 feet in length.

The MEMORIAL ARCH, forming the central feature of the principal façade of the University, is 100 feet in height, 90 feet wide, and 34 feet in depth. The archway is 44 feet wide and 51 feet high. A sculptured frieze twelve feet in height, designed by Augustus St. Gaudens, and representing the "Progress of Civilization in America," surrounds the arch. Above this frieze is a corbelled arch course terminating in the parapet wall four feet above the flat fireproof roof. A circular iron stairway leads from the ground level to the roof.

The ASSEMBLY HALL is the first building east of the Memorial Arch. It has a frontage of 108 feet, with an arcade fourteen feet wide and extended on the west side to connect with the inner quadrangle. The Assembly Hall, including galleries, has a seating capacity of seventeen hundred. The stage is 36x28 feet, with two dressing-rooms on each side. The stage and auditorium are lighted by two large ornamental dome skylights.

The LELAND STANFORD JUNIOR MUSEUM, a concrete building, 540x156 feet, including wings, is situated a quarter of a mile from the quadrangles, and on the west side of the Palo Alto Avenue. The Museum contains the archæological and art collections of the University. Extensive additions to the Museum are in process of construction.

The CHEMISTRY building, completed in 1902, is located between the quadrangles and the Museum. It is of stone, like the quadrangle buildings, and consists of two separate structures—the main Chemistry building and the Assaying Laboratory. The main building is 235 feet in length and 100 feet in width at the wings, and consists of two stories with basement and attic. The Assaying Laboratory is a one-story building, 115x30 feet, in the rear of the main building, and separated from it by an enclosed court.

Behind the central quadrangles are placed the workshops of the engineering departments, experimental laboratories, power-houses, etc.

The dormitories are east and west of the quadrangle. ENCINA HALL, for young men, is at the east, and occupies a ground area of 312x150 feet. It is four stories high, built of the same material as the quadrangle, and decorated with end arcades, a central arched porch, and mosaic work. It is provided with electric lights, hot and cold water, steam heat, suitable furniture, bathrooms on each floor, and has accommodations for three hundred students. ROBLE HALL, for young women, is at the west. It is of concrete, is about a third the size of Encina Hall, and will accommodate one hundred students. MADROÑO HALL is a frame building, at present leased to private parties, but receiving only women students. It will accommodate about thirty students.

ENCINA GYMNASIUM and ROBLE GYMNASIUM are substantial frame buildings, equipped with the necessary apparatus and appliances for physical training. A new Gymnasium for men, to be constructed of stone and equipped with all modern conveniences and appliances, was begun in 1902.

The UNIVERSITY INN is a frame building, just east of the quadrangle, erected in 1898. It is intended primarily as a University commons for students living on the campus, and is leased and managed by an association of students on the co-operative plan.

The grounds immediately about the University have been reserved, in part for experimental and ornamental purposes, and in part as residence sites for members of the Faculty and others who may desire to live on the University campus. Over forty cottages have already been erected.

Scientific Collections

It is intended to bring together in the museums of the University a full representation of the natural history and mineral products of California, collections of all books, pamphlets, photographs, and maps bearing upon the early history of the West, and full collections of Indian antiquities and illustrations of aboriginal life. It is desired to receive donations from all persons who are interested in the work and who have material of value to the museums. Collections sent in this way will be carefully labeled and preserved, and the name of the donor will be kept on record. Messrs. Wells, Fargo & Co. generously offer to transport such gifts to the University free of charge, and have instructed their officials to "receive and promptly forward such offerings as may be tendered from time to time."

Trustees

The general management and control of the institution is vested in a board of trustees originally numbering twenty-four, and chosen for life. By a modification of the charter, effected by the surviving founder in 1897, the number of trustees was reduced to fifteen, and future appointments will be for a term of ten years. The charter provides that the founders, during their lives, shall "perform all the duties and exercise all the powers and privileges enjoined upon and vested in the trustees;" but an Act of the Legislature, passed March, 1903, authorizes the surviving founder to turn over to the trustees during her lifetime the full management and control of the University.

Faculty and Council

The Faculty consists of the president, professors, associate professors, assistant professors, and instructors, aided by non-resident lecturers, assistants, and other officers. Its routine work is divided among various committees, responsible primarily to the president.

The University Council consists of the president, professors, and associate professors. To the Council are entrusted the determination of requirements for admission and for the various degrees, and the recommendation of candidates for graduation. It also acts as an advisory body on any questions of

general policy that may be submitted to it by the president or trustees.

Conduct of Students

In the government of the University the largest liberty consistent with good work and good order is allowed. Students are expected to show both within and without the University such respect for order, morality, personal honor, and the rights of others as is demanded of good citizens. Failure to do this will be sufficient cause for removal from the University.

The primary purpose of the University, as set forth by its founders, is to train young men and young women "for personal success and direct usefulness in life." 'Success' and 'usefulness,' as here understood, involve character and effectiveness; and the resources of the University are directed toward the development of these qualities, so that every graduate may be prepared to do some useful thing honestly and effectively. Each student, therefore, is expected and encouraged to work toward some definite end in the choice of his studies. Students unable or unwilling to do serious work, looking toward a definite end, are not welcomed and will not be retained in the University.

Student Organizations

The Young Men's Christian Association and the Young Women's Christian Association hold regular devotional meetings, and courses of Bible Study are carried on throughout the year. During the opening week of the first semester the Associations maintain an Information Bureau for the accommodation of new students. Under the general direction of the Faculty Committee, they also manage the Student Employment Bureau. The Associations compile each year a *Hand-Book* containing special information relating to the details of University life at Palo Alto, which will be mailed to prospective students on application to the Registrar.

The general direction of student interests, including athletics, musical organizations, intercollegiate debating, etc., is intrusted to the Associated Students. Numerous general student organizations have been formed for mutual assistance and improvement in various lines. Two college journals, the *Daily Palo Alto* and fortnightly *Sequoia*, are published by the

Associated Students. The *Chaparral* is published twice a month, under the auspices of the Press Association. The *Quad* is an annual, published by the Junior Class. The *Alumnus* is published monthly by the Alumni Association.

Departments

The work of the University is grouped under the following departmental heads: Greek, Latin, Germanic Languages, Romanic Languages, English Literature, English Philology, Philosophy, Psychology, Education, History, Economics and Social Science, Law, Drawing, Mathematics, Physics, Chemistry, General Botany, Systematic Botany, Physiology and Histology, Hygiene, Zoology, Entomology, Geology and Mining, Civil Engineering, Mechanical Engineering, Electrical Engineering.

The Department Council consists of all professors, associate professors, and assistant professors in the department. Of this Council, a Senior Professor, designated by the president, acts as presiding and administrative officer. The title of Senior Professor has reference only to the administration of the department itself and bears no relation to general University affairs.

The Hopkins Laboratory of Natural History, located at Pacific Grove, on the Bay of Monterey, is a branch of the biological work of the University.

ADMISSION TO THE UNIVERSITY

1. TO UNDERGRADUATE STANDING

Candidates must be at least *sixteen* years of age. They must present certificates of good moral character, and, if from other colleges or universities, must bring letters of honorable dismissal.

Preparation for undergraduate standing implies the completion of a full four year's high school course, or its equivalent.

Fifteen credits are required for admission in full undergraduate standing, each credit representing one full year's work in the high school, with daily recitations, two laboratory periods being regarded as the equivalent of one recitation period. These fifteen credits may be made up of English composition (two credits) and such other subjects (aggregating thirteen credits) as may be selected by the candidate from the list given below, except that subject 23 may not be offered with either subject 10 or subject 11.

ENTRANCE SUBJECTS

- | | |
|---|--|
| 1. English Composition (2) | 15. English History (1) |
| 2. Elementary Algebra ($1\frac{1}{2}$) | 16. American History (1) |
| 3. Plane Geometry (1) | 17. English Literature (1, 2) |
| 4. Solid Geometry ($\frac{1}{2}$) | 18. Spanish (2) |
| 5. Trigonometry ($\frac{1}{2}$) | 19. French (2, 3) |
| 6. Adv. Algebra ($\frac{1}{2}$, 1, $1\frac{1}{2}$) | 20. German (2, 3, 4) |
| 7. Physics (1) | 21. Latin (2, 3, 4) |
| 8. Chemistry (1) | 22. Greek (2, 3) |
| 9. Physiology (1) | 23. Biology (1) |
| 10. Botany (1) | 24. Physiography (1) |
| 11. Zoology (1) | 25. Mechanical Drawing ($\frac{1}{2}$) |
| 12. Freehand Drawing (1) | 26. Woodworking ($\frac{1}{2}$) |
| 13. Ancient History (1) | 27. Forge Work ($\frac{1}{2}$) |
| 14. Mediæval and Modern History (1) | 28. Foundry Work ($\frac{1}{2}$) |
| | 29. Machine Shop Work (1) |

Twelve credits are accepted for admission in partial standing; but on account of the limitation upon the number of

women students, in and after August, 1904, women will not be received in partial standing.

Entrance credits may be obtained (A) on examination at the University (see pp. 52-53), or (B) wholly or in part without examination (see pp. 53-57).

The following will indicate the preparation necessary in the various subjects:

1. English Composition

The ability to write exercises not only free from marked deficiencies in spelling, punctuation, sentence structure, and paragraphing, but also proving the candidate's ability to think consecutively on a simple subject. Such subjects, as set at the time of the examination, will be drawn for the most part from the candidate's own experiences.

The work in English composition should be given at least two recitations a week throughout the entire high school course. The greater part of this time should be devoted to practice in writing, but it is recommended that some attention be also paid to instruction in the fundamental principles of formal rhetoric.

(2 credits)

A candidate admitted to the University in regular standing without fulfilling the requirement in English Composition will be given an opportunity at the end of his first semester to make good his deficiency. Failing to pass this examination he will be required to enter at once a special class in English Composition (English A) and to remain in it until his work is judged to be of passing grade.

[Concerning time of examination see p. 52, substitutes for examination, p. 54, B, II, 4; exemption from examination, p. 53, B, I, 1, 3.]

2. Elementary Algebra

The requirement in this subject may be roughly defined as algebra through quadratic equations. Emphasis should be placed upon the laws of brackets, the subjects of multiplication, factoring, common divisors and multiples, binomial theorem for integral exponents, and the laws of exponents and of fractions. Under equations are included those of the first degree in two or more unknowns, and simple and quadratic equations in one unknown; also the formation of

equations with given roots, and the statement of problems in equational form.

Facility and accuracy in the manipulation of algebraic expressions should be attained, as well as an understanding of the meaning of the various operations. The solution of a large number of moderately difficult problems is preferable to the solution of a smaller number of more difficult ones; while the frequent use of problems involving literal expressions serves to impress upon the pupil the generality of algebraic results. (1½ credits)

3. Plane Geometry

In the teaching of geometry stress should be placed upon accuracy of statement as well as upon strict reasoning. This end may be promoted by requiring original propositions to be written out in full in a neat and exact manner. Emphasis should be placed upon clear thinking rather than upon the acquirement of geometrical knowledge.

The requirement in plane geometry includes problems in mensuration of plane figures and original propositions, as well as the usual demonstrated theorems. The following topics are included: the general properties of plane figures; the circle, and the measure of angles; areas; regular polygons, and the measure of the circle. (1 credit)

4. Solid Geometry

The topics included are: relations of lines and planes to space; the properties of prisms, pyramids, cylinders, and cones; the sphere and spherical triangle; also the mensuration of solids, and original propositions. (½ credit)

5. Trigonometry

This subject includes the general formulas of plane trigonometry; the theory of logarithms and the use of logarithmic tables; applications to the numerical solution of triangles and of simple problems in heights and distances. (½ credit)

6. Advanced Algebra

The requirements in this subject are arranged in three parts, the topics of the first part (*a*) being usually included in high school courses in advanced algebra. The requirements indicated in the second and third parts (*b* and *c*) represent a more modern treatment of the subject, and are

recommended in place of the topics usually treated in the more advanced courses in algebra.

a. Simultaneous quadratic equations, and equations solved like quadratics; theory of quadratic equations; fractional and irrational equations; surds and complex quantities, arithmetical, geometrical, and harmonic progressions; permutations and combinations. ($\frac{1}{2}$ credit)

b. Theory of degree, homogeneity, and symmetry; type terms and sigma notation; transformation of quotients; conditions of divisibility; the remainder theorem; undetermined coefficients; detached coefficients, and synthetic division; together with applications of the foregoing principles to the multiplication, factorization, and transformation of algebraic functions. ($\frac{1}{2}$ credit)

c. Decomposition of fractions into partial fractions; theory of complex numbers; De Moivre's formula and the roots of numbers; elementary theory of equations; the numerical solution of equations of higher degrees; series. ($\frac{1}{2}$ credit)

7. Physics

The equivalent of one year's work in the high school including both laboratory and text-book work. It is preferred that at least one-half the time be given to laboratory work in which the students perform individually such experiments as are described in the better class of laboratory manuals of which Hall and Bergen's Physics may be named as an example. Accurate notes of the laboratory work should be kept. The text-book study should cover the ground of some modern text, of which Crew's Physics is a good example.

The direct preparation, both in laboratory and text-book work, is fairly represented by Sanford's Elements of Physics. (1 credit)

8. Chemistry

Beside the usual text-book and recitation work, each student should have a course in the laboratory, where he performs the experiments for himself. Accurate notes of the laboratory work should be kept. The amount of laboratory work desired cannot be obtained with less than four hours per week for one school year spent in actual laboratory work. It is preferred that the laboratory work be entirely upon *general* rather than partly upon *analytical* chemistry.

The course required is comprised in Richardson's Laboratory Manual and Principles of Chemistry, or in Remsen's Introduction to the Study of Chemistry, and is the equivalent of Chemistry courses 1 and *a* in the University. The inorganic portion of Roscoe's Elementary Chemistry, or of Elliot and Storer's Elementary Chemistry, with a proper course of laboratory experiments such as is given in Smith and Keller's Laboratory Manual, are also recommended as covering the course required. (1 credit)

Students who receive entrance credit on recommendation, and who wish to continue the study of chemistry in the University, will be admitted to advanced courses only upon passing a satisfactory examination upon the work covered by the elementary course. Failing this, they will be expected to take the elementary course, for which University credit will be given.

9. Physiology

The elements of human physiology and hygiene, the equivalent of Martin's Human Body. The text-book work should be accompanied by experiment, dissection of animals and organs, and a certain amount of study of the tissues with the microscope.

Candidates who have taken only the work in elementary physiology and hygiene done in the grammar or intermediate grades are not prepared to offer the subject for entrance credit. The elementary physiology and hygiene of the grammar grades, in this regard, is in the same category as are the other subjects studied in the grammar grades, such as arithmetic and geography, which are assumed as preliminary to the subjects offered for entrance. (1 credit)

10. Botany

The requirements outlined by the College Entrance Examination Board (based on the report of the Committee on Botany of the Science Department of the National Educational Association, modified by a committee of the Society for Plant Morphology and Physiology) may be taken to represent approximately what is expected of the candidate for entrance credit in Botany. These requirements call for a full year's work, of which it is expected that at least two-thirds shall be genuine laboratory work. One-half of the year is to be de-

voted to the general principles of morphology, physiology, and ecology. In this work proper account should be taken of the lower plants as well as of the flowering plants. The second half-year is devoted to a study of the natural history of representatives of the larger groups of plants, and the principles of classification. This study is expected to include representatives of the algæ, fungi, mosses, ferns, and the principal types of flowering plants. If it seems desirable, the order of the two half-years' work may be reversed or combined in a different way.

Stevens's Introduction to Botany (Heath & Co., 1902) may be mentioned as indicating the scope of the work.

In preparing to meet the requirements in botany, the main thing to be had in mind is that the work shall be of a practical nature; that is, that the study be done mainly from specimens and not from books. It must be borne in mind that botany is a department of biology, and means something more than the mere collecting and naming of specimens. A study of the growth and development of the forms selected is of the highest importance, and, so far as possible, should be made a prominent feature in the work.

If possible, the student should be allowed the use of a compound microscope; but when this is not practicable, microscopic demonstrations by the instructor are indispensable. The laboratory work of the students may be supplemented by such explanatory and text-book work as may be deemed necessary; but this must be understood to supplement and not to replace the laboratory work.

Notes and drawings should be neatly made in blank-books of moderate size. The paper for the drawings should be white, unruled, hard, smooth but not glazed. A hard pencil should be used in drawing, and accuracy and neatness are both to be emphasized. The descriptive notes should not be written upon the same sheets as the drawings, and should be clear and concise, including only what the student has himself seen. Notes taken from lectures or reading should be kept entirely apart from the student's own observations.

No credit will be given for an herbarium. The time necessary to prepare an herbarium may be better devoted to a study of the living plants. (1 credit)

11. Zoology

The candidate should possess a knowledge of the structure and relationships of a series of animals, gained primarily through the study of living forms and the dissection of specimens in the laboratory. At least four hours per week for one school year should be spent in actual laboratory work, which should include a study of the following forms, or their equivalents: amœba, paramœcium, hydra, starfish, sea-urchin, earthworm, crayfish, grasshopper, clam, slug, squid, dogfish, pigeon, rabbit. The dissections should be made in as much detail as is indicated in Marshall and Hurst's Practical Zoology, which is recommended as a laboratory manual. Laboratory notebooks, certified by the instructor, must be submitted as evidence of the nature of the work, and must contain a full series of drawings and notes based on original dissections made by the student.

The practical work indicated above should be supplemented by such lectures or reading as will furnish a comprehensive knowledge of the groups studied. As a general reference book Parker and Haswell's Text-book of Zoology (Macmillan & Co., 1897) is recommended. (1 credit)

12. Freehand Drawing

The candidate should be able to draw something well, showing familiarity with the technical principles involved. This should include as follows:

1. Enough perspective knowledge to foreshorten and draw correctly, from nature, the corner of a room, or a table top with boxes or other articles it may contain. (Extensive knowledge of the theory is not required.)

2. Visual sensitiveness to textures of various objects, and to proportions and character of curves, in objects, in leaf sprays, in birds' wings, etc.

3. The ability to interpret form by light and shade. Special attention should be given to the effect of light and shade, as a whole, on a group consisting of two or three colored objects, such as dishes, books, vegetables, machine parts; also, to the translation of color values into light and shade.

The style of the drawing should be direct, facile, and effective, adapted to the thing drawn, refinement in its proper place and vigor in its proper place. The required skill may be at-

tained in two hundred and forty hours of well directed practice. A group of objects is usually given as a test, but, if the candidate prefers, a cast, or a head from life, or a machine, may be substituted.

The candidate should provide his own materials for the examination: the paper, and pen, or pencil, or charcoal which he is accustomed to use.

As many drawings as possible, duly certified, and accompanied by a statement from the teacher as to the amount and kind of instruction given, should be presented by each candidate.

(1 credit)

13-16. History

All candidates for credit in entrance history must submit evidence of considerable work done in addition to the text-book preparation. For the sake of the training involved, as well as for the information acquired and the stimulating of interest, the following exercises are recommended: supplementary reading, including the use of original material where possible; notes and digests of reading; abstracts or analyses of specified chapters, both of the text-book and supplementary reading; outlines of subjects, gathering material from all available sources; map drawing from printed data or comparison of existing maps, showing movements of exploration, migration or conquest, territorial changes, or social phenomena.

Such work should be regarded as a means rather than the end of historical study, and in every instance should be adapted in character and amount to the stage of advancement of the class and of the individual pupil. As the pupil progresses in his study, more advanced work may well be required in the form of historical composition, and of note-taking in the class from talks by the teacher or reports of fellow pupils.

The evidence of such work must be presented in the form of a note-book or bound collection of notes, containing all exercises prepared upon any of the four history subjects arranged in order of their assignment and certified and approved by the teacher. In the case of schools whose recommendations are accepted in place of the examinations, a detailed statement by the teacher as to the character, amount, and quality of the work of each candidate may be submitted in place of the note-book itself.

13. Ancient History

Text-books: *The Oriental Nations*—Myers, General History, pp. 1-86; West, Ancient History, pp. 1-75; and Adams, European History, pp. 1-16; or equivalents. *Greece*—Botsford, History of Greece; West, Ancient History; or the equivalent. *Rome*—Botsford, History of Rome; Myers, Rome; West, Ancient History; or Morey, Outlines of Roman History; or the equivalent.

For supplementary reading and reference: "Epochs of Ancient History" Series; Wolfson, Essentials in Ancient History; Cox, General History of Greece (Student Series); Pelham, Outlines of Roman History; Abbott, Roman Political Institutions; Shuckburgh, History of Rome; and Ginn & Co.'s Classical Atlas, or Kiepert, Classical Atlas. (1 credit)

14. Mediæval and Modern History

Text-books: Myers, Mediæval and Modern History; Robinson, History of Western Europe; or the equivalent.

For supplementary reading and reference: Duruy, History of the Middle Ages; Adams, Civilization During the Middle Ages; Bémont and Monod's Mediæval Europe; Fyffe, History of Modern Europe (Popular Edition); Seignobos, Political History of Europe since 1814; the "Epochs" Series; University of Pennsylvania, Translations and Reprints; Fling, Studies in European History; and Putzger, Historischer Schul-Atlas. (1 credit)

15. History of England

Text-books: Gardiner, Student's History of England; Ransome, Advanced History of England; Larned, History of England; or Terry, History of England; or the equivalent.

For supplementary reading and reference: Bright, History of England; Traill, Social England; Larned, History for Ready Reference; Porritt, The Englishman at Home; Adams and Stephens, Select Documents of English Constitutional History; Kendall, Source Book of English History; and Gardiner, School Atlas of English History. (1 credit)

16. American History

Text-books: McLaughlin, History of the American Nation; Channing, Students' History of the United States; or Johnston, History of the United States (MacDonald's Revision); Hinsdale, American Government; or Clark, Outlines of Civics, and

Bryce, *American Commonwealth* (abridged edition); or equivalents.

For supplementary reading and reference: "Epochs of American History" Series; the "American History" Series; Hart, *American History Told by Contemporaries*; MacDonald, *Select Chapters of American History*, and *Select Documents of United States History*, and McCoun, *Historical Geography of the United States*. (1 credit)

For additional original material in all the history subjects, and for the best use that can be made of such material, *Historical Sources in Schools* (Macmillan Co.) will be found serviceable.

17. English Literature

A detailed list of the works read in preparation should be handed to the examiner when the candidate presents himself for examination. Blanks for this purpose may be obtained on application to the Registrar.

a. *Elementary*.—Candidates for admission who offer subject 17a will be examined in reading aloud. In connection with this examination they will be tested in their ability to follow the course of thought in ordinary prose and verse, and in their general knowledge of the books read in preparation.

The teacher may make out the course of reading from the following list of books, choosing two books from Group I, two from Group II, three from Group III, and four from Group IV. [The word *or* is to be understood as permitting only one of the books among which choice is to be made.]

Group I.—Shakspere's *Merchant of Venice*, *Julius Cæsar*, *Macbeth*; the four Gospels (one book); or the equivalent of *Old Testament Stories* (Modern Readers' Bible Series).

Group II.—George Eliot's *Silas Marner* ($\frac{1}{2}$); Goldsmith's *The Vicar of Wakefield* ($\frac{1}{2}$); Thackeray's *The Newcomes*, or *Henry Esmond*; Scott's *Ivanhoe*, or *Rob Roy*, or *Quentin Durward*; Cooper's *The Last of the Mohicans*; Hawthorne's *House of the Seven Gables*.

Group III.—The *Sir Roger de Coverley Papers*; Irving's *Alhambra*, or *Sketch Book*; Hawthorne's *Twice Told Tales*; Webster's *First Bunker Hill Oration*; De Quincey's *Flight of a Tartar Tribe*; Macaulay's *Essay on Clive*; on *Warren Hastings*; Carlyle's *Essay on Burns*.

Group IV.—Pope's Rape of the Lock; a translation of Homer's *Iliad*, I, VI, XXII, XXIV; Goldsmith's *Deserted Village* ($\frac{1}{2}$); Gray's *Elegy in a Country Churchyard* ($\frac{1}{2}$); Burns' *Tam o' Shanter* and *Cotter's Saturday Night* ($\frac{1}{2}$); Byron's *Prisoner of Chillon* ($\frac{1}{2}$); Keats' *Eve of St. Agnes* ($\frac{1}{2}$); Coleridge's *Ancient Mariner*; Scott's *Lay of the Last Minstrel*, or *Lady of the Lake*, or *Marmion*; Lowell's *Vision of Sir Launfal* ($\frac{1}{2}$); Tennyson's *Enid and Geraint*; Macaulay's *Horatius* ($\frac{1}{2}$).
(1 credit)

[Substantial equivalents for any books in the foregoing list will be accepted. The list of books prescribed for entrance subject 1 at the University of California is acceptable as a substitute, except that Classic Myths must be replaced by a book from Group II.]

b. *Advanced*.—The examination in subject 17b will presuppose a detailed study of the books presented, and a general knowledge of their place in the history of English literature. Great emphasis will be laid on the candidate's power of intelligent interpretation.

Teachers may make out a course from the following list, selecting one book from Group I, one from Group II, and taking up the whole of Group III, or two books from Group I and three from Group II. Repetition of books offered for subject 17a should be avoided.

Group I.—Macbeth; *Paradise Lost*, Books I and II; portions of the Bible; Spenser's *Faëry Queene*, Book I, Cantos I, II, and III; Chaucer's Prologue to the *Canterbury Tales*.

Group II.—Macaulay's *Essay on Clive*, or on *Warren Hastings*, or on *Milton* ($\frac{1}{2}$), or on *Addison* ($\frac{1}{2}$), or *Life of Johnson* ($\frac{1}{2}$); De Quincey's *Flight of a Tartar Tribe*; Burke's *Speech on Conciliation*.

Group III.—Hales's *Longer English Poems*, omitting Spenser's *Prothalamion* and Shelley's *Adonais*, and employing only such annotations as are of value in giving a full understanding of the text; or Syle's *From Milton to Tennyson*, omitting *Lycidas*, Shelley's *Euganean Hills*, the selections from Pope, Thomson, Johnson, Clough, and Browning, and poems reckoned in 17a, IV. For other omissions, equivalents must be offered.
(1 credit)

[Fair equivalents for 17b, such, for example, as the books

prescribed for entrance subject 14 (*a* and *b*) at the University of California, will be accepted.]

[Concerning time of examination, see p. 52; substitutes for examination, p. 55, B, II, 7; exemption from examination, p. 53, B, I, 1, 3.]

18. Spanish

The preparation in Spanish should follow the same lines as those outlined below for Elementary French, and should include the same amount of reading (four hundred to six hundred duodecimo pages). The following books are recommended: Ramsey, *An Elementary Spanish Text-book* (Holt & Co.), or Garner, *A Spanish Grammar* (American Book Co.), Ramsey, *An Elementary Spanish Reader* (Holt & Co.), Matzke, *First Spanish Readings* (D. C. Heath & Co.), Tamayo y Baus, *Un Drama Nuevo* (Jenkins, New York), Valdés, José (D. C. Heath & Co.), Alarcon, *El Capitan Veneno* (D. C. Heath & Co.).

(2 credits)

19. French

a. Elementary.—The requirements for Elementary French are as follows: 1. An accurate knowledge of the forms of the language, including the inflections, conjugations, and principal parts of verbs. Particular attention should be devoted to this part of the subject; constant drill in the verbal inflections, both written and oral, ought to give the desired results. Dictation exercises, where English forms are to be rapidly translated into French, are especially recommended. 2. The elements of French syntax, such as the uses of the article, the personal pronouns, and the subjunctive, the partitive constructions, and the agreement of the participles. 3. The ability to turn easy English into French. 4. The ability to translate ordinary French readily and rapidly. 5. The ability to pronounce French correctly. It is believed that a fairly good pronunciation of French can be obtained in the fitting schools, where students are still young and the organs of speech are more readily trained, if the necessary time is devoted to the subject. French pronunciation should be studied both theoretically and practically, and the differences of vowel qualities, of stress, pitch, and intonation between French and English should be pointed out.

These results ought to be secured from a careful study of

an elementary grammar, such as Fraser and Squair's French Grammar and Reader (D. C. Heath & Co.), or Whitney's Practical French Grammar, Part I (Holt & Co.), or Grandgent's Short French Grammar (Heath & Co.), or Chardenal's Complete French Course (Allyn & Bacon); in prose composition, from the study of the exercises belonging to these grammars and the translation of the first thirty-four pages of Grandgent's Selections for French Composition; in reading, from the study of from four hundred to six hundred duodecimo pages from the works of at least three different authors. While no definite authors are prescribed, the following are suggested as forming a suitable combination: Super's French Reader (D. C. Heath & Co), Dumas, *La Tulipe Noire*, Halévy, *L'Abbé Constantin*, Labiche, *Le Voyage de Monsieur Perrichon*, and Mérimée, *Colomba*. For the study of pronunciation Matzke's Primer of French Pronunciation (Holt & Co.) is recommended.

(2 credits)

b. Advanced.—The requirements for Advanced French are as follows: 1. A thorough knowledge of modern French syntax. 2. The ability to turn modern French at sight into idiomatic English. 3. The ability to translate connected English prose into French. 4. The ability to write French from dictation.

These results ought to be secured from the study of the syntax in any of the usual school grammars, such as Fraser and Squair's French Grammar and Reader (D. C. Heath & Co.), Whitney's Practical French Grammar (Holt & Co.), Edgren's Compendious French Grammar (Heath & Co.), or Bevier's French Grammar (Holt & Co.), and from the reading of from four hundred to six hundred duodecimo pages of prose and verse from at least four standard authors, in addition to the requirements for Elementary French. While no definite texts are prescribed, the following are recommended as forming a suitable combination: George Sand, *La Petite Fadette*, Balzac, Eugénie Grandet, Victor Hugo, *Hernani* (D. C. Heath & Co.), Fontaines, *Historiettes Modernes* (D. C. Heath & Co.). The examination will include a test of pronunciation and the writing of French from dictation.

(1 credit)

20. German

The requirements in Elementary and Intermediate German are essentially those recommended by the Committee on Col-

lege Entrance requirements of the National Education Association.

a. Elementary.—A satisfactory preparation will require: The ability to translate easy German prose and verse at sight; an accurate knowledge of the principles of grammar, embracing especially inflections, word-order, syntax, the composition of words, the force of prefixes and suffixes, and the relation of the English and German consonantal changes; the ability to translate easy prose from English into German; also the ability to pronounce German and to recognize German words and simple sentences when spoken. Careful attention should be given to the rules for pronunciation length of vowels, and accentuation, to insure the fluent and intelligent reading of the German texts used in the class-room. This preparation would be represented, approximately, in reading, by Brandt's, Whitney's, Hewett's, or Thomas and Hervey's Reader, and the careful study of one or more modern dramas (about two hundred duodecimo pages of easy German); in grammar, by Whitney's, Brandt's, Joynes-Meissner's, or Thomas's Grammar; and in German prose, by the first twenty-six exercises in Harris's German Prose Composition, or the Themes in Thomas and Hervey's German Reader. The work in German prose should be preserved in note-books used exclusively for that purpose, written in ink, and consisting of the original work done by the student, followed by the corrected work approved by the teacher.

All candidates must present a statement from their former teacher of the amount of German read and the text-books used.
(2 credits)

b. Intermediate.—A satisfactory preparation will require, in addition to the requirements for Elementary German: The ability to translate ordinary German prose and verse at sight; a thorough knowledge of word-formation, derivatives, and cognates; advanced German syntax, with especial reference to the uses of the tenses, the modal auxiliaries, and the subjunctive and infinitive moods; the ability to translate into German easy connected English prose.

It is believed that this preparation can be acquired by the careful reading of five hundred duodecimo pages of classical

and contemporary prose and verse, in addition to the reading required for Elementary German. It is recommended that at least one-half of this reading be selected from the following works: Lessing's *Minna von Barnhelm*, Goethe's *Egmont*, or Götz von Berlichingen, Schiller's *Wilhelm Tell*, or Maria Stuart, Heine's *Harzreise*, Freytag's *Bilder aus der deutschen Vergangenheit*. For the preparation in translation from English into German the first fifty pages of von Jagemann's, or Poll's *German Prose Composition*, or its equivalent, is recommended. The work in German prose should be preserved in the manner suggested under Elementary German. It is desirable that candidates should acquire the ability to follow a recitation conducted in German, and to answer in simple German sentences.

All candidates are required to present a statement from their former teacher of the amount of German read and text-books used. *(1 credit)*

c. Advanced.—A fourth credit in German may be given to candidates who fulfill, in addition to the preparation required in Elementary and Intermediate German, the following requirements: Advanced German grammar and syntax; elements of the comparative grammar of English and German; study of Goethe's *Hermann und Dorothea*, or *Iphigenia*, Lessing's *Nathan der Weise*, and Schiller's *Wallenstein*, and the reading of advanced literary and scientific German prose; advanced German prose composition, and the ability to follow lectures given in German.

Candidates will present statements from their former teachers of the work done. *(1 credit)*

21. Latin

a. Elementary.—The requirements for Elementary Latin include accuracy in pronunciation, a thorough knowledge of the forms, familiarity with the simpler principles of syntax, a vocabulary of from fifteen hundred to two thousand common words, and the ability to translate easy prose, and to write simple Latin sentences.

These attainments ought to be secured from the careful study of a beginner's book and about one hundred and ten pages of classical prose, together with daily exercise in oral or written composition based upon the authors read. Candi-

dates expecting entrance credit upon recommendation from approved schools, must complete satisfactorily the equivalent of four books of Cæsar and twenty-five pages of some easy Latin, and translate into Latin English exercises to the amount of fifty solid pages. The examinations in Latin Composition for 1903-04 will be based upon the first four books of Cæsar's Gallic War. (2 credits)

b. *Advanced*.—The requirements for advanced Latin include the ability to translate at sight the simpler portions of Cicero's orations and Vergil's Æneid, familiarity with the principles of Latin hexameter, and the power to translate a passage of connected English based on Cicero.

These attainments ought to be secured from the careful study of seven orations of Cicero and six books of Vergil's Æneid, if supplemented by daily exercises in composition and occasional practice at sight reading. Those who read one or two orations of Cicero the preceding year will be able to add Sallust's Catiline or some of Ovid the third year. Another fifty pages of English into Latin will be required of all who expect entrance credit upon recommendation from approved schools. One credit may be given in advanced Latin to those who are lacking in the composition or in the Vergil.

(2 credits)

22. Greek

a. *Elementary*.—Grammar, the inflections, the formation of words, and the essential points of syntax; Xenophon's Anabasis, Books I-IV, or an equivalent; prose composition (Collar and Daniell's text-book is recommended); translation at sight of easy prose. It is expected of every student that he be able to read Greek aloud without stumbling. (2 credits)

b. *Advanced*.—Homer, Iliad, Books I-III, or an equivalent; advanced prose composition. The candidate must show a thorough acquaintance with the forms and syntax of Homer, and must be able to scan any given passage exactly and to read it rhythmically. In the writing of Greek the candidate should have a year's training beyond that required in Elementary Greek. (1 credit)

23. Biology

A course of study and laboratory work extending through

one school year, the time divided equally between Botany and Zoology. The character of the work is indicated under the respective statements of Botany and Zoology (subjects 10 and 11).
(1 credit)

24. Physiography

The equivalent of Davis's Physical Geography, with an approved laboratory and field course of at least forty exercises actually performed by the candidate. The original note-book, certified by the instructor, and recording, with dates, the steps and results of the observations made by the candidate, must be submitted as evidence of the nature of the work. Special stress will be placed upon the candidate's ability to interpret physiography.
(1 credit)

25. Mechanical Drawing

The candidate is expected to have acquired neatness and accuracy in the use of drawing instruments. His course should have included practice in line work, lettering, machine or architectural working drawings, and tracing. He should present for inspection as much of his work as possible, duly certified by his teachers. As an examination the candidate may be called upon to make a simple working drawing of some specified object.

Equivalent to about one hundred and fifty hours of work under instruction.
($\frac{1}{2}$ credit)

26-29. Shopwork

Two things will be expected of candidates for entrance credit in these subjects: first, manual dexterity, as evidenced by the neatness, accuracy, and dispatch in the execution of a given piece of work; second, a knowledge of the materials and tools used, and a thorough understanding of the principles involved in the operations.

Candidates who have been trained in manual training schools or in commercial shops should present letters from their teachers or employers stating clearly and in some detail the time they have been employed, the kind of work they have done, and its quality. Every candidate, no matter what his credentials are, will be required to undergo an examination. This may be oral, written, the actual execution of a set piece of work, or all combined. In each subject the ability to read and follow a working drawing is expected.

Below are given the more specific requirements for the particular subjects, with the understanding that the foregoing general requirements apply to them all.

26. Woodworking

The ability to recognize the common varieties of wood and some knowledge of their physical properties, such as ease of working, strength, toughness, hardness, etc., is expected. Candidates must be familiar with the uses of the principal hand tools of carpentry and with their care. They should be able to make the ordinary kinds of joints and splices. They should be familiar with the operation of the lathe; the jig, band, and circular saws; and planing machines.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop.

($\frac{1}{2}$ credit)

27. Forge Work

This demands an elementary knowledge of the properties of wrought iron and steel, and of the proper heats at which to work them. The management of forge and fire and the nature and uses of all the ordinary blacksmithing tools should be known. The candidate must be able to execute all of the common forging processes, including the various forms of welds in iron and steel; he is also expected to understand hardening, tempering, and annealing.

Equivalent to about two hundred hours of work under instruction in a manual training school, or a year in a commercial shop.

($\frac{1}{2}$ credit)

28. Foundry Work

The candidate should have a knowledge of the tools and processes used in the ordinary forms of green sand moulding and core work. He should be familiar with the cupola and know how to charge and operate it. He must have a knowledge of the properties of cast iron, and should have had experience in pouring cast iron as well as in moulding.

Equivalent to about two hundred hours under instruction in a manual training school, or a year in a commercial foundry.

($\frac{1}{2}$ credit)

29. Machine Shop

A knowledge of the tools and processes used in the working of iron, steel, and brass is demanded of the candidate. He

should be able to execute all forms of vise-work, such as chipping, filing, scraping, fitting, and finishing. He must be familiar, through experience, with the simpler forms of machine tools, such as the lathe, drilling machine, planer, shaper, and milling machine.

Equivalent to about four hundred hours under instruction in a manual training school, or two years in a commercial shop. (1 credit)

A. ENTRANCE CREDITS ON EXAMINATION

Examinations in all entrance subjects are held at the University in January and in August. Entrance examinations are also held in May in English Composition and English Literature.

[Candidates desiring examinations in other subjects at the close of the school year are advised to take the June examinations of the College Entrance Examination Board. These examinations will be held in 1903, in California, at the Belmont School, Belmont, and at St. Matthews School, San Mateo. (For particulars and other information address Secretary, College Entrance Examination Board, Sub-Station 84, New York City.)]

Specimen examination questions may be obtained on application to the Registrar.

Entrance examinations are held in the following order (for dates, see p. 5):

First Day—Elementary Algebra, 8:15; Advanced Algebra and American History, 10:15; Plane Geometry and Botany, 1:30; Solid Geometry and Mediæval and Modern History, 3:30; Trigonometry, 4:45.

Second Day—Physiology and Elementary French, 8:15; English Composition, 10:15; Chemistry and Advanced French, 1:30; English History, 3:30.

Third Day—Physics and Spanish, 8:15; Physiography and Elementary German, 10:15; Zoology and Intermediate German, 1:30; Advanced German and Elementary Latin, 3:30.

Fourth Day—Biology, Mechanical Drawing, and Advanced Latin, 8:15; Woodworking, Forge Work, and Elementary Greek, 10:15; Freehand Drawing, Foundry Work, and Advanced Greek, 1:30; Ancient History and Machine Shop Work, 3:30.

The examinations in English Literature are oral, and continue throughout the entire four days; but appointments must be made during the forenoon of the first examination day, unless arranged in advance by letter or otherwise.

Candidates for admission may, if they prefer, take a part of their examinations a semester or a year before they propose to enter; but account will not be taken of an examination passed more than sixteen months before the proposed time of entering.

B. ENTRANCE CREDITS WITHOUT EXAMINATION

I. On Fulfilling Other Requirements

1. A candidate fulfilling all the requirements for admission in full standing to Bryn Mawr, California (Groups, I, II), Chicago, Columbia, Cornell (A. B. course), Harvard (A. B. course), Johns Hopkins, Michigan (15 unit plan), Smith, Vassar, Wellesley, or Yale (A. B. course), will be admitted to full undergraduate standing without further tests.

2. A candidate fulfilling all the requirements for admission in full standing to the State Universities of California (Groups III, IV), Illinois, Indiana, Iowa, Kansas, Minnesota, Missouri, Nebraska, or Wisconsin, will be admitted to provisional partial undergraduate standing; but entrance credits in particular subjects will be given only when all the specific requirements of this University, including supplementary tests, have been met, and all deficiencies must be made up in the usual way. (On account of the limitation upon the number of women students, in and after August, 1904, this provision will not apply to women.)

In order to take advantage of the provisions under (1) and (2) above (except in case of the University of California) graduates of accredited schools must first present their credentials to the University by which the school is accredited. The statement of standing issued by the accrediting University should then be presented for admission to this University.

3. Preliminary credits secured by passing the regular entrance examinations of any of the institutions named above, or of the College Entrance Examination Board, will be accepted in subjects corresponding to those outlined in the entrance list provided such supplementary tests as are required of recommended students (see below) are satisfactorily fulfilled,

4. Recommended graduates of the California State Normal Schools, and of other State Normal Schools of equivalent rank, may be admitted, without examination, except in English Composition, to provisional undergraduate standing, such standing subject to revision after one year's attendance.

5. Diplomas and sixty count academic certificates (and subsequent pass cards) issued by the Regents of the University of the State of New York will be accepted in place of recommendations from approved schools (see below).

6. Undergraduate standing, without examination, will be granted to candidates from Japan, as follows: (1) to matriculates of the Imperial Universities of Tokyo and Kyoto; (2) to graduates of the Sapporo Agricultural College, the Higher Commercial School, Doshisha College, and Keio Gijyuku College; (3) to graduates of the eight Higher Schools (Kotogakko), the two Higher Normal Schools, the Girls' College, and the Girls' Higher Normal School. But before admission to the University such candidates must pass an examination showing ability to use and to understand readily both written and spoken English.

II. On Recommendation from Approved Schools

Entrance credits may be granted on the recommendation of the principal of any approved preparatory school, subject to the following conditions:

1. The candidate must have completed a full course in the school and have been duly graduated after at least one year's attendance.

2. The candidate must be specifically recommended by the principal in the subjects in which exemption is sought.

3. The University reserves the right to reject the recommendation in any particular subject, if for any reason the work done is deemed insufficient or unsatisfactory.

4. In English Composition recommendations must be supplemented (1) by an acceptable exercise in writing English at the University (see p. 35), or (2) by an acceptable exercise-book presented under the following conditions: The book must contain at least six compositions of about 250 words each, written in class and not corrected by the teacher, not more than two of them to be on subjects drawn from the pupil's reading. Blanks

to be filled out by the teacher and sent in with the exercise-books, may be obtained on application to the Registrar. To be acted on in August, the books must be in the hands of the Registrar by August 10th; to be acted on in January, by December 15th. But candidates who have passed the preliminary or advanced entrance examinations in English at Bryn Mawr, Chicago, Columbia, Cornell, Harvard, Johns Hopkins, Michigan, Smith, Vassar, Wellesley, or Yale, or of the College Entrance Examination Board, will be excused from this exercise in writing English.

5. In Physics, Physiology, Botany, Zoology, Drawing, and Biology, recommendations must be supplemented by acceptable drawings and laboratory note-books. These note-books should contain the actual notes taken in the laboratory, not copies; and drawings and notes must be certified by the teacher. In Physics the candidate must also pass an examination in the text-book work, at the University. But, beginning with 1902, candidates who have passed the entrance examination in Physics at Bryn Mawr, California, Chicago, Columbia, Cornell, Harvard, Smith, Vassar, or Wellesley, or of the College Entrance Examination Board, or who have been accredited by any of these Universities on the basis of visitation and inspection of schools, or by the New England College Entrance Certificate Board, will be excused from all supplementary tests in Physics.

6. In all History subjects recommendations must be supplemented by acceptable note-books, duly certified by the teacher. A detailed statement by the teacher as to the character, amount, and quality of the work may be submitted in place of the note-book itself.

7. In English Literature recommendations must be supplemented by an acceptable oral examination, at the University. But candidates acceptably recommended in both *a* and *b* will be examined only in *b*; and candidates who have passed the full entrance examinations in English at Bryn Mawr, California, Chicago, Columbia, Cornell, Harvard, Johns Hopkins, Michigan, Smith, Vassar, Wellesley, or Yale, or of the College Entrance Examination Board, will be excused from any supplementary oral test.

8. In French, German, and Advanced Greek, recommenda-

tions must be supplemented by acceptable exercise-books in Prose Composition, duly certified by the teacher, or by an examination at the University in Prose Composition. But candidates who have passed the corresponding entrance examinations at Bryn Mawr, California, Chicago, Columbia, Cornell, Harvard, Johns Hopkins, Michigan, Smith, Vassar, or Wellesley, or of the College Entrance Examination Board, or who have been accredited by any of these Universities on the basis of visitation and inspection of schools, or by the New England College Entrance Certificate Board, will be excused from all supplementary tests.

9. In Physiography and Shopwork recommendations must be supplemented by duly certified note-books and drawings, and by an examination at the University. But the corresponding examinations of California, Chicago, Columbia, Harvard, and Michigan, and of the College Entrance Examination Board, will be accepted.

A candidate presenting acceptable recommendations in subjects aggregating *fifteen* credits may be assured of admission to the University, notwithstanding various supplementary tests which must be met. But final entrance credit in any particular subject will not be given until all required tests have been satisfactorily met, and such supplementary tests must be fulfilled within one year after matriculation.

In general, the completion of a full four years' high school course in any school accredited, on the basis of visitation and inspection, by any of the Universities mentioned above (B, I, 1 and 2, p. 53), or by the New England College Entrance Accrediting Board, will insure admission to the University, the adjustment of credits to follow the usual regulations. (On account of the limitation upon the number of women students, in and after August, 1904, this provision will not apply to women.)

Recommendations will be considered at any time of the year, but since, in general, candidates cannot be assured of admission to the University without examination in one or more subjects, it is important that recommendations be forwarded as early as possible.

Blanks for admission on recommendation may be obtained from the Registrar.

II. AS SPECIAL STUDENTS

Persons under twenty-one years of age will not be received as special students.

The privileges extended to special students are not intended for those who come directly from the schools, with insufficient preparation for regular standing, but for those who are qualified by age, character, practical experience, and habits of study to profit by university courses. Such properly qualified persons may be admitted as special students, without fulfilling the regular entrance requirements, upon presenting satisfactory credentials and testimonials; except that on account of the limitation upon the number of women students, in and after August, 1903, women will not be admitted as special students. This latter provision will not affect those who have already matriculated in the University.

Special students are subject to the same University regulations as regular undergraduates, and they may become candidates for graduation upon fulfilling all University requirements, including those for entrance.

A failure on the part of any special student to maintain a good standing in the studies to which he is admitted will at once sever his connection with the University; and a special student suspended for failure in University work may be readmitted only upon attaining regular undergraduate standing.

Blank applications for admission as special students may be obtained from the Registrar.

III. TO ADVANCED STANDING

Students from other institutions of recognized collegiate rank, who present letters of honorable dismissal, may be admitted to such standing and upon such terms as the Faculty may deem equitable. Students from institutions of equivalent rank, who maintain a satisfactory record after admission, may expect to receive the same standing as at the former institution, except that no such student can be given more than three years' advanced credit (ninety hours toward graduation), and that differences in standard of entrance preparation will be taken account of. Every candidate is required to present, along with a catalogue of the institution in which he has studied, a full statement, duly certified, of the studies he has

completed, including studies passed or credited at entrance.

Recommended graduates of the San Francisco State Normal School, and of other approved State Normal Schools where the normal training has been preceded by a full four years' high school course, may be granted an advanced credit of not more than thirty hours.

Blank applications for admission to advanced standing may be obtained from the Registrar.

All applications for advanced standing on the basis of work done before entering the University must be filed within two years after matriculation; and such applications will not be received at a later date.

IV. TO GRADUATE STANDING

Graduates of this University, and of other institutions of recognized collegiate rank, may be admitted to graduate standing in the University upon presentation of diplomas or equivalent credentials. Admission to technical graduate standing does not imply admission to candidacy for an advanced degree (for the conditions of such candidacy see p. 68). If graduates of other universities desire to become candidates for the baccalaureate degree, the question of hours required for graduation may be waived and the degree conferred on the satisfactory completion of not less than thirty hours of University work and the fulfillment of all major and minor requirements. Graduate students not candidates for any degree, may be admitted, upon the approval of the major professor, to such work as their previous training seems to warrant.

UNIVERSITY RESIDENCE

Registration

On the appointed Registration Days, in August and January, each student must obtain a certificate of registration *in person*, at the Registrar's office.

Matriculated students may register after the appointed Registration Days and during registration week, upon payment of a special fee of two dollars; after that the fee for late registration will be four dollars.

Study Card

At the Registrar's office the student receives a card for selection of studies for the semester. This card, properly filled out, and approved by the major professor, must be filed with the Registrar not later than the Friday following Registration Day; but late study cards will be accepted upon payment of a special fee of two dollars. Students registering after the Friday of registration week, must have their study cards indorsed by all the instructors under whom work is taken.

Enrollment in Classes

A student desiring to enter any class must present his certificate of registration to the instructor for enrollment at the beginning of each semester. Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. In general, the pre-requisites for taking any given course are noted under 'Courses of Instruction.'

Change of Studies

A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration a petition for such change, approved by the major professor and by the instructors whose subjects are to be taken or dropped. In general, petitions so approved, if they do not give the student too many hours or too few hours, and if presented within one month after the beginning of the semester, are granted without question. If presented at a later time in the semester they will be

granted only for extraordinary reasons, and, where the taking up of new subjects is involved, only on payment of a special fee of two dollars; if otherwise acceptable but presented after the close of the semester, they will be granted only on payment of a special fee of four dollars for each course.

Change of Major Subject

Petitions to change the major subject will be granted when approved by the professors in charge of both the old and the new subjects, the student being held to all the requirements of the new major subject. In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

Amount of Work

Fifteen hours per week of recitations or lectures, or their equivalent in laboratory work, constitute an average semester's work. In general, students may register for as few as *thirteen* or as many as *eighteen* hours, except that where conditions or failures have been incurred in the preceding semester not more than *fifteen* hours may be registered unless by special permission of the Committee on Registration. But in the case of students doing outside work for self-support or otherwise, and where considerations of health are involved, special restrictions will be made upon recommendation of the professor of hygiene. Permission to register for less than *thirteen* hours may also be granted for special reasons; but registration for less than nine hours will not be accepted. Graduate students are not held to any special number of hours, but registration will not ordinarily be permitted unless such students are prepared to devote at least half of their working time to University study. Petitions for irregular hours should be presented at the beginning of the semester.

Every hour for which credit is given is understood to represent approximately, for the average student, three hours of actual work per week, through one semester. Thus, in lecture or recitation work, one hour is allotted to the lecture or recitation and two hours for preparation or subsequent reading and study on the part of the student. Where the time is wholly occupied with drawing, field, or laboratory work, three full hours per week through one semester are expected of the student for each hour that counts toward graduation. Where the

drawing, field, or laboratory work is supplemented by systematic outside reading or experiment under the direction of the instructor, such a reduction may be made in actual drawing, field, or laboratory time as seems just to the department concerned.

Conditions and Failures

A student conditioned in any subject may arrange with the instructor concerned for such supplementary examinations or study as will make good the deficiency; but such deficiency must be removed within one year after the condition is incurred otherwise the condition will be considered a failure. Work reported as incomplete must be made up within one semester. A student failing in any subject cannot receive credit for the portion in which the failure is incurred until the subject has been re-registered and taken over again in class. A condition or failure or withdrawal from class without permission of the Committee on Registration, limits the student to *fifteen* hours the semester following.

Entrance Conditions

Students admitted to partial undergraduate standing may make up entrance deficiencies (1) by completing before graduation, in addition to the one hundred and twenty hours required for graduation, five hours of university work for each entrance credit lacking (except in the case of English Composition, which must be passed on examination); or (2) by passing entrance examinations in the additional subjects necessary, provided such examinations are passed within one year after admission to the University. All supplementary tests necessary to give final entrance credit in any recommended subjects must be fulfilled within one year after matriculation.

From Special to Regular Standing

Special students may be entered in regular standing and become candidates for graduation, on passing examinations in the required number of entrance subjects. In place of entrance examinations, university work to the amount of five hours for each entrance credit may be offered in university subjects which are also included in the entrance group.

University Credit for Extra Entrance Subjects

Credit toward graduation may be given for entrance subjects in excess of the number required for admission, provided

such extra entrance subjects are also university subjects, and are successfully continued in the University within two years after matriculation, and provided the student's general University record is deemed proof of superior scholarship. Applications for such university credit must be made within two years after matriculation. After matriculation additional entrance credits may be offered only for the purpose of making up entrance deficiencies, except that recommended subjects requiring supplementary tests for final credit may be counted as extra entrance subjects, if such supplementary tests are fulfilled within one year.

University Credit for Special Courses

University credit is given only for work done in residence at the University. Work prescribed by any professor of such a nature that it cannot be done at the University or can be more advantageously done elsewhere may be regarded as work done in residence. But such special work must be duly registered in advance and must be included in the thirty-six hours permitted for any calendar year.

Advanced Standing from Other Institutions

Advanced standing for work done before matriculation will generally be given only when certified as having been completed in some institution of recognized collegiate rank, except as provided above (p. 61) for extra entrance credits, or, in particular cases, to recommended graduates of approved State Normal Schools (see p. 58). But in special cases permission may be given by the Faculty to receive credit on examination for work equivalent to regular University courses. Application for such examinations, with satisfactory evidence of the work accomplished, must be presented to the Committee on Advanced Standing. Applications for advanced standing on the basis of work done before entering the University must be made within two years after matriculation.

Matriculated students on leave of absence may take work in other universities, usually without any restrictions other than those imposed by the university in question. But work undertaken in any Summer Session may be subject to special regulations; and the last semester's work of every candidate for a degree must be taken in this University.

Leave of Absence

A student desiring to leave the University for a brief time should apply to the Committee on Registration. If leave of absence is desired on account of sickness the petition must be indorsed by the professor of hygiene. A leave of absence is merely a justification of the absence and not a relief from the work that has been missed. A leave of absence is usually necessary only in case of interrupted work; a student in good standing absent one or more semesters may re-enter at the beginning of any semester without formal petition.

EXPENSES OF THE STUDENT

Fees

Graduate students in Law and Engineering, and undergraduate students in full standing, are charged a registration fee of *ten dollars* per semester; undergraduates in partial standing, and special students, *fifteen dollars* per semester. But these registration fees are waived in the case of all *bona fide* residents of California who have been resident in the State at least one year immediately preceding registration. Students in laboratory courses pay for the materials which they use, and in various courses syllabus fees are charged. Laboratory and syllabus fees are different for the different courses, ranging from *fifty cents* to *twenty-five dollars* per semester (see under 'Courses of Instruction').

Cost of Living

The cost of living in Roble Hall, including board, room, light, heat, and attendance averages about twenty-five dollars per month. Students furnish their own linen, blankets, towels, and napkins. Rooms may be reserved in advance by making a deposit of two dollars. Women students may live outside the Hall only in places approved by the University.

Rooms in Encina Hall, furnished similarly to those in Roble Hall, but without board, cost from \$4.50 to \$5.50 per month, with two in a room. There are a few single rooms at \$7 per month. Students occupying a double room alone pay the full price of the room. Each double room is furnished with two single beds. Rooms may be reserved in advance by making a deposit of two dollars.

In Palo Alto and College Terrace, at an average distance of a mile and a quarter from the University, good rooms and board, in private houses, can be obtained, at from eighteen to twenty-five dollars per month. A considerable number of students live in co-operative clubs, in which good board and rooms may be had for fifteen dollars per month. These rooms are lighted and heated, but usually unfurnished. Special commutation tickets are issued by the Southern Pacific Company, and students living in towns on the line of the railway, from San Francisco to San Jose, can easily go to and from the University daily. Carriages connect with all trains at Palo Alto. A careful list of available rooms and boarding places outside the Halls is compiled a week or ten days before the opening of the University year in August, and is on file for easy reference at the Information Bureau of the Christian Associations, in the quadrangle. New students will find no difficulty in securing suitable accommodations upon their arrival.

The University Inn, located near the quadrangle, has dining accommodations for about three hundred students. The cost of board during 1902-03 has been about \$4 per week.

Books and stationery will average from eighteen to twenty-five dollars per year.

The expenses of the student, exclusive of clothing and railway fares, need not exceed \$225 to \$300 per year.

MEMORIAL SCHOLARSHIP

The LELAND STANFORD JUNIOR SCHOLARSHIP, established by the surviving founder, in 1900, in memory of her son, pays the necessary expenses of its holder throughout the undergraduate course. The first holder is Mr. John Titus Cooper, of Los Angeles.

SELF-SUPPORT OF STUDENTS

A considerable number of students manage, in one way or another, to earn the whole or a part of their expenses while attending the University. Such opportunities occur in the line of office and laboratory assistance, personal services of numerous kinds, the management of various student enterprises, agencies for laundries, etc.

The Christian Associations, under the supervision of the Faculty Committee on Student Employment, register without

charge all students who apply for employment, and supply employers with student labor as demanded. In general, the demand and supply are very nearly equal, but the Committee desire to call the attention of new students who intend to earn the whole or a part of their living, to the following results of their experience:

1. There is a constant *over-supply* of those wishing to do teaching and clerical labor. None but those having superior qualifications and experience are likely to secure employment the first semester.

2. There is constant demand for efficient stenographers and typewriters; also for men and especially women students who can do domestic labor of any kind: many earn board and room rent by waiting on table, washing dishes, general housework, house cleaning, gardening, etc.

3. Students who can do any kind of domestic or manual labor *well*, and who have thoroughly good health, can earn their board by three hours' work per day, or board and room by four hour's work per day. Those who have learned a trade find it comparatively easy to earn their expenses, obtaining employment *as* barbers, plumbers, bookbinders, printers, mechanics, carpenters, electricians, engineers, etc. But the Committee strongly advise that no student should come to the University without resources sufficient for the expenses of one semester. There have been several instances of failure in studies and serious ill-health on the part of those who have come without resources.

4. The University curriculum is adapted to those who have control of their entire time for study. The student who must earn his living therefore, should expect to take less than the usual amount of University work.

5. No student should come expecting to earn money, who can do nothing well; skill is absolutely essential, as competition is quite as severe in the college community as elsewhere.

6. Opportunities for earning money during summer vacations can usually be counted on, the demand for canvassers being most constant.

Particular inquiries concerning opportunities for self-support should be addressed to the Secretaries of the Christian Associations.

GRADUATION

Candidates may present themselves for graduation in January, May, and September.

No degree will be conferred upon any person who has not spent at least one year in resident study at the University. No honorary degrees are given.

Teachers' Certificates

County, or City and County Boards of Education are authorized to grant High School Certificates (as provided in Sections 1521, 1775, and 1792 of the Political Code of California, and in accordance with the regulations of the State Board of Education), to graduates of this University upon presentation of a recommendation from the Faculty; *provided*, that such recommendation shall show that the applicant has taken courses in the theory of education, or in the actual practice of teaching, under the supervision of the Department of Education, equivalent to twelve hours per week for one-half year; *provided*, that after July, 1906, at least one-third of the prescribed work in education shall consist of actual teaching in a well equipped training school of secondary grade directed by the Department of Education.

Recommendation of Teachers

The Faculty Committee on Recommendation of Teachers maintains (1) a registry of students and graduates who wish to teach, or to be transferred to other teaching positions, and (2), upon application of Boards of Education or School Trustees and in co-operation with Teachers' Agencies, recommends for suitable vacancies such candidates as seem most likely to succeed.

The University does not solicit positions for its graduates, and the Committee reserves the right to refuse to recommend candidates enrolled. Information received from University instructors and others regarding the fitness of candidates is regarded as confidential, and general letters of recommendation are not given. No charge is made for any service rendered.

Blanks for registration will be furnished on application to the Registrar.

BACHELOR OF ARTS

The degree of BACHELOR OF ARTS (A. B.) is conferred upon candidates who have satisfactorily completed a total of one hundred and twenty hours of University work and who have also satisfied the requirements in major and minor subjects.

Thirty hours constitute a normal year's work (see p. 60), but the ordinary class divisions (freshman, sophomore, junior, and senior) are not recognized by the University. The degree is conferred whenever the requirements are met, without regard to the time spent, except that at least thirty hours (including the last fifteen) must be completed in this University.

Each student selects as his major subject or specialty the work of some one department. This department has the authority to require the completion of this *major* subject, and also of such *minor* subjects in other departments as may be considered necessary or desirable collateral work. Such major and minor requirements taken together will not (except in the departments of applied science) exceed forty hours of University work, or one-third of the student's time during his undergraduate course.

With these exceptions, all the undergraduate work in all departments is elective. The student may freely choose for such elective work any subject taught in the University, which his previous studies have prepared him to undertake.

The professor in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of such professor is necessary to graduation.

BACHELOR OF LAWS

The professional degree of BACHELOR OF LAWS (LL. B.) is conferred upon students who have previously received the academic degree of Bachelor of Arts, or its equivalent, and who have completed fifteen courses in Law, exclusive of Elementary Law and the Special Courses in Law, provided they have spent two years in resident study at the University, one year of which has been as graduate students. Students over twenty-one years of age (including Special Students) who have

completed the above work with distinguished excellence in residence at this University, will also be given the degree of Bachelor of Laws.

Candidacy for Advanced Degrees

Every applicant for an advanced degree must file at the Registrar's office not later than the beginning of the semester preceding that in which the degree is sought, a formal application including a statement of the proposed course of study. This application must be approved by the major professor, and upon acceptance by the Faculty the applicant is admitted to candidacy for such advanced degree. It is advisable that such application be made as early as possible in the student's course. Where a thesis is required it shall be upon a subject approved by the major professor, and, if for the doctor's degree, shall be presented in its final form at least six weeks before the close of the semester in which the degree is sought. Accepted theses for the master's degree, shall be bound in a uniform style and deposited in the University Library. No advanced degree will be conferred except upon the recommendation of the appropriate Faculty committee.

MASTER OF ARTS

The degree of MASTER OF ARTS (A. M.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, or the passing of a satisfactory examination, or both. At least two-thirds of the year's work required of the candidate is to be devoted to the major study. Work done in the University outside of the requirements for the degree must be registered, but will not be taken into account in connection with the degree.

Special regulations are as follows:

1. A report upon the character of the work done will be made by each instructor under whom a candidate is registered.
2. Some evidence of ability to do original work is required of every candidate. In addition, therefore, to examination, a thesis is expected, unless such evidence is furnished in other ways.

ENGINEER

In the departments of applied science the professional degree of ENGINEER is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion, in residence, of one year of professional study beyond the baccalaureate requirements of the department in which the degree is sought, and on the presentation of an approved thesis, showing ability to do independent work.

DOCTOR OF PHILOSOPHY

The degree of DOCTOR OF PHILOSOPHY (Ph. D.) is conferred upon graduates of this University, and upon others who have had an equivalent training elsewhere, on the satisfactory completion of at least three years of graduate work, beyond the baccalaureate requirements of the department in which the degree is sought, under the following conditions:

1. The degree is given only on the ground of advanced scholarship and the ability to do independent work in some special line, and not for merely faithful study for a prescribed time or course, nor for miscellaneous study. Three years represents the minimum time in which the degree can be obtained and often a longer period of study will be necessary.

2. Graduate work done elsewhere may be accepted in place of resident study in this University; but in no case will private study without sufficient guidance, or pursued at a distance from libraries or laboratories or other necessary facilities, be accepted as an equivalent; and no degree will be granted to any person who has not spent at least the last year of such study in residence at this University.

3. The course of study shall embrace one major subject and one or two minors in related departments. The minor subject or subjects shall represent approximately one-third of the course of study; except that such minor subjects may be waived, on the recommendation of the department in which the major subject is taken, and with the approval of the Faculty, whenever the general preparation or special needs of the candidate make such a course seem desirable.

4. The candidate must present a thesis of such a character as shall display power of original and independent investiga-

tion and constitute an actual contribution to knowledge. He must guarantee the printing of the thesis, in a form approved by the Faculty, within one year after the degree is conferred, and must deposit one hundred copies in the University Library.

5. The candidate must sustain such final examinations in major and minor subjects as may be prescribed by the departments in which studies are taken, and also shall submit to such tests or examinations as may be required by the special Examining Committee of the Faculty. This special committee shall be responsible for the fitness of the candidate.

The special Examining Committee shall consist in each case of (1) the professor in charge of the major subject, (2) the one or more professors in charge of the minor subjects, (3) two members of the Committee on Graduate Study whose departments lie nearest to that of the major professor, and (4) the Chairman of the Committee on Graduate Study, acting as its secretary.

6. In addition to the foregoing conditions prescribed by the University, the Faculty will, in general, insist upon the following conditions: (1) that all candidates be required to show a reading knowledge of French and German; (2) that, whenever practicable, the departmental examinations, in both major and minor subjects, be written, the papers of candidates to be submitted to the special committee prior to the day fixed for the final test before that committee; (3) that examinations in minors be held not earlier than the second semester before the time named for conferring the degree.

COURSES OF INSTRUCTION

[*Courses for 1902-03, with Announcements for 1903-04*]

GREEK

Professors AUGUSTUS TABER MURRAY, HENRY RUSHTON FAIRCLOUGH (Latin).

Associate Professor HENRY WINCHESTER ROLFE.

Assistant Professor JEFFERSON ELMORE.

Instructors BENJAMIN OLIVER FOSTER, ERNEST WHITNEY MARTIN.

UNDERGRADUATE COURSES

Instruction in the lower classes is given chiefly by means of recitations, but as the student advances these are supplemented by lectures.

It will be seen that provision is made for those who have had no Greek before coming to the University.

1. **Elementary.**—Grammar; translation of easy prose; Greek composition. After the essential grammatical forms have been mastered, passages of continuous prose are taken up for translation, and, as soon as is practicable, the *Anabasis*. The student is made familiar with the ordinary forms of syntax, and exercises in writing Greek are regularly introduced. This course does not count as a part of the major work for students in Greek. *5 hrs., both semesters* (MARTIN)

2. **Plato and Lysias.**—The *Apology* and *Crito*, and selections from *Lysias*. Course 2 is open to those who have offered subject 22 on entrance, or who have completed course 1 in the University. *3 hrs., 1st semester* (ELMORE)

3. **Herodotus and Homer.**—A continuation of course 2. Selections from *Herodotus* and the *Odyssey*. *3 hrs., 2d semester* (ELMORE)

4. **Prose Composition and Sight Translation.**—Simple Prose is taken up for sight reading, and the exercises are based upon

the text read. Course 4 is required of all students in courses 2 and 3 who are making Greek their major study.

2 hrs., both semesters (FOSTER)

5. Homer.—A critical study of the Iliad, with discussions and papers on Homeric topics. Open to those who have completed courses 2 and 3, or an equivalent.

3 hrs., 1st semester (ROLFE)

6. Oratory.—Jebb's Selections from the Attic Orators, with lectures. A continuation of course 5.

3 hrs., 2d semester (ROLFE)

7. Prose Composition and Sight Translation.—Selections for translation are made from the historical and philosophical writers. A variety of practical exercises in Greek composition are prepared according to the needs of the class. Open only to those who have completed course 4, or an equivalent, but required of major students before graduation.

2 hrs., both semesters (ROLFE)

8. Classical Mythology.—A study of the Greek and Roman myths, illustrated by ancient sculptures and vase-paintings. Lectures, illustrated with stereopticon, and recitations.

2 hrs., 1st semester (ROLFE)

9. History of Greek Sculpture.—From the earliest times down to the time of Alexander. Lectures, illustrated with stereopticon and recitations.

2 hrs., 2d semester (ROLFE)

10. Greek Testament.—A study of the Gospels with reference to classical idiom. [Course 10 will not be given in 1903-04.]

1 hr., both semesters (MURRAY)

11. Greek Tragedy.—The Prometheus of Aeschylus, the Antigone and Electra of Sophocles, and the Hippolytus and Iphigenia Taurica of Euripides are read and interpreted. Other plays are assigned for private study, and lectures on the drama are from time to time given.

3 hrs., both semesters (MURRAY)

12. Plato and Demosthenes.—The Phædo and the De Corona are read and interpreted.

3 hrs., 1st semester (ROLFE)

13. Thucydides.—Books VI and VII, the Sicilian Expedition. [Courses 12 and 13, alternating with course 11, will not be given in 1903-04.]

3 hrs., 2d semester (ROLFE)

14. Teachers' Course.—Lectures and practical exercises.
2 hrs., 1st semester (MURRAY)
15. Theocritus.—A reading of the Idyls, with illustrative lectures.
2 hrs., 1st semester (FAIRCLOUGH)
16. Lyric Poetry.—Readings and lectures.
2 hrs., 2d semester (FAIRCLOUGH)

GRADUATE COURSES

The center of the Graduate work is the Greek Seminary—made up of the director and such students as satisfy him of their fitness for the work. The Seminary meets weekly for the critical interpretation of some Greek author, the different members, in turn, filling the post of interpreter. Topics for investigation are assigned, and papers prepared by the members are read and discussed.

Members of the Seminary are expected to supplement their critical work by wide reading, and lectures on the author or authors under discussion are given by the director. It is in the highest degree desirable that all members of the seminary should be able to read both French and German.

17. The Greek Seminary.—In 1903-04 the Seminary will be occupied with the study of the Iliad. The portions of the poem selected for interpretation will be those of cardinal importance with reference to the structure of the whole. Courses 18, 19, 20, and 21 form an integral part of the seminary work. Students should provide themselves in advance with the editions of the Iliad by Leaf (2 vols., the Macmillan Co., 2d. ed. 1900-02), and by Ameis-Hentze (complete and with the Anhang, Leipzig, Teubner). Monro's Homeric Grammar (Clarendon Press), or van Leuwen's Enchiridium Dictionis Epicæ, with convenient texts of both Iliad and Odyssey (Oxford or Teubner series), should also be in the hands of all.

2 hrs., both semesters (MURRAY)

18. Rapid Reading.—Graduates and advanced students will meet weekly for the rapid reading of the Homeric poems.

2 hrs., both semesters (MURRAY)

19. The Iliad.—Lectures on the structure of the poem, and a discussion of modern Homeric criticism.

1 hr., 1st semester (MURRAY)

20. Homeric Antiquities.—Lectures on the Homeric age.*1 hr., 1st semester* (ROLFE)**21. Historical Grammar.**—Lectures on the sounds and inflections of Greek.*2 hrs., 2d semester* (FOSTER)

SPECIAL LECTURES

Throughout the year Professor MURRAY gives lectures, twice weekly, on Greek Epic and Dramatic Poetry. These lectures are intended for general literary students, and do not presuppose a knowledge of Greek; they will not count as a part of the major work for students in Greek.

22. The Greek Epic. *2 hrs., 1st semester* (MURRAY)**23. Greek Tragedy.** *2 hrs., 2d semester* (MURRAY)

 LATIN

Professors HENRY RUSHTON FAIRCLOUGH, AUGUSTUS TABER MURRAY (Greek).

Associate Professor HENRY WINCHESTER ROLFE.

Assistant Professor JEFFERSON ELMORE.

Instructors BENJAMIN OLIVER FOSTER, ERNEST WHITNEY MARTIN.

UNDERGRADUATE COURSES

The aim of the undergraduate courses in Latin is to give the student a somewhat systematic knowledge of the language and its development, an acquaintance with the representative authors of Latin literature, and some insight into the life, culture, and civilization of ancient Rome.

1. Elementary.—Grammar; translation of easy prose; Latin composition. This elementary course is intended for mature students who have had no school training in Latin.

5 hrs., both semesters (MARTIN)

2. Cicero and Vergil.—Cicero, five orations; Vergil, six books of the *Æneid*; exercises in Latin composition. This course is planned for those who have passed in entrance subject 21a. Courses 1 and 2 do not count as major work for students in Latin.

5 hrs., both semesters (———)

3. Cicero, Livy, and Terence.—Cicero, *De Senectute*; Livy,

Books XXI-II; Terence, *Andria*, review of grammar and Roman history; study of Roman private life. Open to students who have completed course 2, or who have offered subject 21b on entrance. Two sections.

3 hrs., both semesters (ROLFE, FOSTER)

4. **Prose Composition and Sight Translation.**—Open to those taking course 2, and required of all major students in Latin. This course provides rapid reading in Cicero, Livy, Nepos, and Sallust, with exercises in composition based mainly on texts familiar to the student.

2 hrs., both semesters (MARTIN)

5. **Horace.**—Open to those who have completed course 3. Attention will be directed especially to the style and subject matter of Horace, to his influence upon later literature, and to the salient features of the Augustan age.

3 hrs., 1st semester (ELMORE)

6. **Tacitus.**—Selections from his works. This course, complementary to course 5, will involve a study of the history and literature of the early empire.

3 hrs., 2d semester (ELMORE)

7. **Prose Composition and Sight Translation.**—Open to students who have taken course 4, and required of all major students in Latin.

The class will read selections from various authors. Special effort will be made to get at the Roman point of view, and to grasp the meaning in the order of the Latin. The exercises for translation into Latin will be prepared to suit the needs of the class. Conversation and the writing of epistles in Latin will be made a feature of the course.

2 hrs., both semesters (FOSTER, FAIRCLOUGH)

8. **Latin Comedy.**—In this course the *Trinummus* of Plautus will be studied with particular reference to the early forms, constructions, and meters; and that followed by the more rapid reading of the *Captivi* and *Rudens* of Plautus, and the *Andria* and *Phormio* of Terence. Considerable attention will be paid to a comparison between ancient and modern comedy, the development of Latin comedy, the early theatre, and the method of presenting a play.

3 hrs., 1st semester (FAIRCLOUGH)

9. **The Letters of Cicero.**—The aim will be to get a view of Cicero and his times from the original sources, to ascertain the causes for the breaking down of the Republic, and to become familiar with official procedure in the judicial and legislative bodies. Special attention will be paid to the style of the letters. *3 hrs., 2d semester* (FOSTER)

10. **Catullus, Tibullus, and Propertius.**—Selections from these authors will be studied, largely with reference to the thought and artistic form, and compared with similar poems of other writers. [Course 10, alternating with course 11, will not be given in 1903-04.] *2 hrs., 1st semester* (ELMORE)

11. **Lucretius.**—Selections from the *De Rerum Natura* will be read with particular attention to the philosophic thought and its poetic treatment. *2 hrs., 1st semester* (FOSTER)

12. **Quintilian.**—In connection with the study of the subject matter of Books X and XII, considerable attention will be paid to literary criticism and to the history of Roman literature. [Course 12, alternating with course 13, will not be given in 1903-04.] *2 hrs., 2d semester* (FOSTER)

13. **Roman Society in the First Century.**—Illustrative selections will be read from the Satires of Juvenal and the Epigrams of Martial. Supplementary reading will be assigned in various writers on that period. *2 hrs., 2d semester* (ELMORE)

14. **Teachers' Course.**—Lectures on methods of teaching Latin, with practical exercises. Open only to advanced students. *2 hrs., 2d semester* (ELMORE)

15. **Latin Composition.**—A course for third year students. *1 hr., both semesters* (ELMORE)

16. **Roman Law and Institutions.**—Lectures will be given upon the leading principles of Roman Law; and the more important institutions of the Republican period will be studied according to the topical method. This course, open to all who have a reading knowledge of Latin, may be taken as a one-hour or a two-hour course. [Not given in 1903-04.] *1 hr., 2d semester* (ROLFE)

17. **Roman Tragedy.**—Selected tragedies of Seneca will be

read and interpreted with reference to their Greek originals. Lectures, dealing with the earlier tragic writers and with the influence of Seneca on later literature, will form a part of the course. Open only to advanced students.

2 hrs., 2d semester (MURRAY)

18. **An Introduction to the Versification of the Roman Dramatic Poets.**—This course, intended mainly for major students, will deal especially with the Versification of Plautus and Terence. The work will consist of practical exercises and a discussion of the more important metrical problems in this field. [Not given in 1903-04.]

1 hr., 1st semester (ELMORE)

19. **Latin Hymns.**—Selections from the Latin hymns and certain pieces of mediæval Latin prose of somewhat similar interest will be read in this course. Open to third and fourth-year students and to graduates. [Not given in 1903-04.]

1 hr., 1st semester (ROLFE)

20. **Petrarch and the Humanists.**—Certain of Petrarch's Latin letters will be read, for the purpose of gaining some knowledge of the manner in which the mediæval mind was emancipated through the study of classical literature. Open to third and fourth-year students and to graduates. [Not given in 1903-04.]

1 hr., 2d semester (ROLFE)

GRADUATE COURSES

These courses are open to graduates in Latin, who have had at least two years' undergraduate work in Greek. The ability to read French and German is also very desirable, and, in the case of candidates for the degree of Ph. D., necessary. The aim of the courses is to give the student a thorough grasp and detailed knowledge of particular authors, and of certain periods and fields of literary activity, as well as a training in literary criticism, and an acquaintance with the methods of original research.

21. **Latin Seminary.**—In 1903-04 the *Æneid* of Vergil will be studied in its entirety. Students should provide themselves in advance with a good text, such as Ribbeck's (Teubner), or Thilo's (Weidmann), and with one of the best complete annotated editions, such as Kennedy's or Conington's.

2 hrs., both semesters (FAIRCLOUGH)

22. **Epic Poetry.**—Lectures on the development of Latin Epic Poetry. *1 hr. both semesters* (FAIRCLOUGH)
23. **Rapid Reading.**—Vergil's successors in Epic poetry. *2 hrs., both semesters* (ELMORE, FOSTER)
24. **Latin Composition.**—Translation of passages from English authors. *1 hr., 2d semester* (FAIRCLOUGH)
25. **Historical Grammar.**—Lectures on the sounds and inflections of Latin, with reading of early inscriptions. [Not given in 1903-04.] *2 hrs., 2d semester* (FOSTER)
26. **Journal Club.**—A club, composed of the instructors and graduate students, will meet monthly for reports on articles of interest in the current periodicals and on new books that appear.

SPECIAL COURSES

27. **Roman Poets.**—Selections in translation, with lectures and prescribed reading. This course is intended for general literary students, and will not count as a part of the major work for students in Latin. *2 hrs., 1st semester* (FAIRCLOUGH)
28. **Roman Art and Monuments.**—A survey of the architecture, sculpture, and topography of ancient Rome and the provinces. This course is open to all students. *2 hrs., 2d semester* (FAIRCLOUGH)

GERMANIC LANGUAGES

Professors JULIUS GOEBEL, JAMES OWEN GRIFFIN.

Assistant Professors KARL G. RENDTORFF, WILLIAM ALPHA COOPER.

Instructor CHARLES FREDERICK SCHMUTZLER.

Assistant ADOLPH KARL VON NOÉ.

The aim of the elementary classes in this department is to give the student a thorough knowledge of German grammar and to enable him to acquire facility in reading German. The more advanced classes take up the study of the poets and

writers of the classical period, and it is intended to offer, by the reading and interpretation of these authors, an equivalent for the study of the ancient languages to those not taking Latin or Greek in their University course. The general responsibility for the work of the first and second years rests with Professor GRIFFIN; that for the work in Literature and Philology, with Professor GOEBEL.

Students who intend to engage in preparatory teaching of German are expected to include courses 7, 8, 10, 11, 12, and 14.

1. **Elementary.**—German Grammar and German Reader; German Composition; Novelletten; translation of easy prose and poetry. Course 1 is intended for those beginning the study of the language. Four five-hour sections and one three-hour section. Students who have had training in Latin, and students who have some knowledge of German, but not sufficient to enable them to pass in entrance subject 20a, will be admitted to the three-hour section.

3 and 5 hrs., both semesters

(GRIFFIN, COOPER, SCHMUTZLER)

2a. **Second-Year German.**—Lessing's *Minna von Barnhelm*, Heine's *Prosa*. [In 1903-04 Goethe's *Götz von Berlichingen* and Lessing's *Prosa* will be read.] Advanced grammar and composition, translation at sight. Open to students who have completed course 1 or its equivalent, or who have received credit for entrance subject 20a.

3 hrs., both semesters

(GRIFFIN, COOPER, SCHMUTZLER, VON NOÉ)

2b. **Rapid Reading.**—The rapid translation of modern German prose; writing of German from dictation; paraphrasing of the German text. This course should be taken in connection with course 2a, which it is intended to supplement. So far as is consistent with a thorough understanding of the work the course will be conducted in German.

2 hrs., both semesters (GRIFFIN, COOPER)

3. **Scientific and Historical German.**—The work in Scientific German consists of the translation of monographs by such leading German scientists as Cohn, Weissman, and Helmholtz. The work in Historical German consists of the rapid translation of modern historical and economic German. Essays pub-

lished in current numbers of the *Deutsche Rundschau* and other leading German periodicals are studied. No student is advised to take this course who has not had at least two years of thorough preparation in literary German.

2 hrs., both semesters (SCHMUTZLER)

4. **Classical German Drama.**—*a.* Schiller's *Wallenstein*, with lectures on the social and political conditions of the period. (First semester.) *b.* Goethe's *Iphigenie*, interpretation and lectures in connection with Kuno Fischer's *Essay on Iphigenie*. (Second semester.)

2 hrs., both semesters (GRIFFIN)

4a. **Modern German Drama.**—Lectures in connection with the interpretation and rapid reading of some of the more important works of the modern dramatists such as Heyse, Wildbrant, Sudermann, Hauptmann, Wildenbruch, etc.

2 hrs., both semesters (GRIFFIN)

5. **Third-Year German.**—Lessing's *Nathan der Weise* and Goethe's *Tasso*. [In 1903-04 Goethe's *Iphigenie* and Schiller's *Wallenstein* will be studied.] During both semesters one hour of this course will be devoted to the reading of literary, scientific, and historical German prose.

3 hrs., both semesters (RENDTORFF, VON NOÉ)

6. **Modern German Novels.**—Cursory reading of standard novels by Scheffel, Freytag, Gottfried, Keller, etc.

2 hrs., both semesters (RENDTORFF)

7. **Advanced German Composition.**—Translation of graded exercises covering the most important parts of German syntax. Writing of essays in German. Open to students who have completed course 2, or its equivalent.

2 hrs., both semesters (RENDTORFF, VON NOÉ)

8. **Deutsche Syntax.**—*Aufsätze und Stilübungen*. Open to students who have completed course 7, or its equivalent.

1 hr., both semesters (RENDTORFF)

9. **History of German Civilization.**—This course is intended for students of German who wish to become more intimately acquainted with German history and the development of German civilization. A special study will be made of the periods of the Migrations, the Crusades, the Reformation, the Thirty-

years War, and the eighteenth and nineteenth centuries in their relation to German literature. Open to all students of German. *2 hrs., both semesters* (RENDTORFF)

10. Teachers' Course.—This course is intended for students who expect to become teachers of elementary German. Lectures and exercises. Open to advanced students only.

2 hrs., 1st semester (GOEBEL)

11. Goethe.—Goethe's Faust, First and Second Parts. Interpretation with lectures on the development of the Faust legend, the history of Goethe's Faust, and its philosophical and ethical ideas. [In 1903-04 Goethe's Lyric Poems will be interpreted.]

2 hrs., both semesters (GOEBEL)

12a. History of German Literature from the Earliest Times to the Reformation.—[Not given in 1903-04.]

2 hrs., both semesters (RENDTORFF)

12b. History of German Literature During the Eighteenth Century.—Lectures and Readings.

2 hrs., both semesters (GOEBEL)

12c. History of German Literature During the Nineteenth Century.

2 hrs., both semesters (RENDTORFF)

13. Poetics.—Lectures on the psychology and æsthetics of poetry as the basis for literary criticism. Comparative study of the principal theories of lyric, epic, and dramatic poetry from Aristotle to the present time. This course is open to all students of literature.

2 hrs., 2d semester (GOEBEL)

GRADUATE COURSES

The graduate courses in German, for which a thorough linguistic preparation is required, are intended especially for students who will make the teaching of German their later profession. Careful attention is given to the linguistic as well as to the literary training of the student, aiming at a comprehensive insight into the historical growth of the Germanic languages and literatures. The scientific methods of original and critical research are taught and practiced in the seminary. Such students as have given satisfactory proof of their ability as independent investigators will be admitted to the degree of Doctor of Philosophy, upon fulfilling the general requirements prescribed by the University.

Library facilities include the extensive library of the late Professor Hildebrand of Leipzig, which offers, on account of the rare completeness of the collection in all branches of Germanic philology and literature, extraordinary opportunities for graduate work in German.

14. **Middle-High German.**—Middle-High German Grammar, with readings from Weinhold's *Lesebuch*.

2 hrs., 1st semester (GOEBEL)

15. **Gudrun.**—[In 1903-04 the *Nibelungenlied* will be interpreted.]

2 hrs., 2d semester (GOEBEL)

16. **Old-High German and Old Saxon.**—Old-High German and Old Saxon Grammar, with readings from Braune's *Lesebuch*.

2 hrs., 1st semester (GOEBEL)

17. **Heliand.**—Interpretation and lectures.

2 hrs., 2d semester (GOEBEL)

18. **Old Norse.**—Old Norse Grammar, with readings of Old Norse prose texts. (Holthausen's *Lesebuch*.)

2 hrs., 1st semester (GOEBEL)

19. **Edda.**—Interpretation of the heroic lays of the older Edda in their relation to the *Nibelungenlied*. [Courses 18 and 19 will not be given in 1903-04.]

2 hrs., 2d semester (GOEBEL)

20. **Gothic.**—Gothic Grammar and interpretation of select passages from *Wulfila*.

2 hrs., 2d semester (GOEBEL)

21. **Comparative German Grammar.**—Lectures on the comparative grammar of the Old Germanic dialects.

2 hrs., 2d semester (GOEBEL)

22. **German Seminary.**—In 1902-03 a special study was made of Jean Paul and *Das junge Deutschland*. [In 1903-04 the work of the Seminary will be devoted to Herder during the first semester. During the second semester a special study will be made of the history of the Germans in America and their influence upon American civilization.]

2 hrs., both semesters (GOEBEL)

ROMANIC LANGUAGES

Professor JOHN ERNST MATZKE.

Associate Professor OLIVER MARTIN JOHNSTON.

Assistant Professors PIERRE JOSEPH FREIN, MARATHON MONT-ROSE RAMSEY, COLBERT SEARLES.

Assistants CLIFFORD GILMORE ALLEN, WESLEY ROBERTSON LONG.

The undergraduate courses in the Romanic Languages are planned so as to give students an intimate acquaintance with the modern forms of the languages spoken in the principal neo-latin countries. To this end systematic attention is paid to pronunciation, reading, syntax, and conversation. In the higher courses special emphasis is laid on the study of the literature of these countries. In order to give students an opportunity to become familiar with the spoken idioms, several of the advanced courses are conducted as much as possible in the language which forms the object of study.

Students will have the opportunity of selecting either French or Spanish as their major subject. In French a minimum of twenty-eight hours will be required for graduation, consisting of courses 2, 3, 4, 5, 6, 7, 8, and 9. In Spanish a similar requirement will include courses 10, 11, 12, 13, 14, 15, 16, and 17.

1. **Elementary French.**—Fraser and Squair's French Grammar and Reader, with written exercises and systematic training in French pronunciation on the basis of Matzke's Primer of French Pronunciation; Super's French Reader; Halévy, L'Abbé Constantin; Mérimée, Colomba. In this course the study of the language is taken up from the beginning. Stress is laid upon the acquisition, theoretical and practical, of a correct pronunciation, but no direct attempt is made to teach French conversation. The student's entire energy is concentrated upon the attainment of a full and accurate reading knowledge of the language, to which end grammar and composition are made systematically to contribute. Open to all, but students desiring to enter after the end of the second week will be admitted only upon special examination.

3 hrs., both semesters (FREIN, SEARLES, ALLEN)

2. Modern French Syntax.—Fraser and Squair, French Grammar. Open to students who have completed course 1, or who have received credit for entrance subject 19a.

2 hrs, both semesters (JOHNSTON, FREIN)

3. Modern French Reading.—France, *Le Crime de Sylvestre Bonnard*; Daudet, *Tartarin de Tarascon*; Balzac, *Eugénie Grandet*; Hugo, *Hernani*; Rostand, *Cyrano de Bergerac*. Open to students who have completed course 1, or who have received credit for entrance subject 19a.

The section meeting at 9:15 will be open only to students selecting course 2, or having completed it, and will be devoted to more special study of syntax in connection with the reading. The remaining sections are intended to give general opportunity for obtaining a more perfect reading knowledge of the language.

2 hrs., both semesters

(FREIN, SEARLES, LONG)

4. French Conversation.—There will be three meetings of the class during the week, but no particular preparation will be required, and only one hour of credit will be given toward graduation. Open to students who have completed course 1, or who have credit for entrance subject 19a.

1 hr., both semesters (FREIN)

[Courses 2, 3, and 4 constitute the second year's work in French, and should, if possible, be taken during the same year. Course 4 may not precede course 2.]

5. Classical French.—A study of the principal authors of the classical period. The following texts will be read: Corneille, *Le Cid*, *Cinna*, *Polyeucte*; Racine, *Andromaque*, *Athalie*; Molière, *Les Précieuses Ridicules*, *Tartuffe*, *Le Bourgeois Gentilhomme*; Voltaire, *Zaïre*; La Fontaine, *Fables*; Boileau, *L'Art Poétique*. Lectures on the development of French Literature in the seventeenth century. Open to students who have completed courses 2 and 3, or their equivalent.

3 hrs., both semesters (JOHNSTON)

6. History of French Literature from the Renaissance to the Romantic Movement.—Lectures in French, supplemented by reading and reports by the members of the class. Open to students who have completed courses 2, 3, and 4, or their equivalent.

2 hrs., both semesters (FREIN)

7. **History of French Literature in the Nineteenth Century.**—Lectures, with reading of the principal authors and reports by the members of the class. Students should provide themselves with Pellissier, *Le mouvement littéraire au XIXe siècle* (Paris, Hachette, 1889.) Open to students who have completed courses 5 or 6. *2 hrs., both semesters* (MATZKE)

8. **Advanced French Prose Composition.**—Translation into French of selected English prose. Open to students who have completed course 2, or its equivalent.

1 hr., both semesters (JOHNSTON)

9. **French Themes.**—The course will be conducted entirely in French. Open to students who have completed courses 2 and 4, or their equivalent. *1 hr., both semesters* (FREIN)

10. **Elementary Spanish.**—Ramsey, *An Elementary Spanish Text-Book*; Matzke, *First Spanish Readings*; Valdéz, José; Tamayo y Baus, *Un Drama Nuevo*. Open to all.

3 hrs., both semesters (RAMSEY, ALLEN)

11. **Modern Spanish Syntax.**—Ramsey, *A Text-book of Modern Spanish*. Open to students who have completed course 10, or who have received credit for entrance subject 18.

2 hrs., both semesters (RAMSEY)

12. **Modern Spanish Reading.**—Ramos y Vital, *Zaragueta*, *Gal-dós Marianela*; Caballero, *La Familia de Alvareda*; Moratín, *El Sí de las Niñas*; Zorilla, *Don Juan Tenorio*. Open to students who have completed course 10, or who have received credit for entrance subject 18.

2 hrs., both semesters (LONG)

13. **Spanish Conversation.**—There will be three meetings of the class during the week, but no particular work will be required in preparation and only one hour of credit will be given toward graduation. Open to students who have completed course 10, or its equivalent.

1 hr., both semesters (RAMSEY)

[Courses 11, 12, and 13 constitute the second year's work in Spanish, and should, if possible, be taken during the same year. Course 13 may not precede course 11.]

14. **Classical Spanish.**—Cervantes, *Don Quijote*; Lope de Vega, *La Estrella de Sevilla*; Calderón, *La Vida es Sueño*, and *El*

Mágico Prodigioso; Téllez, Don Gil de las Calzas Verdes; Alarcón, El Tejedor de Segovia; Guillen de Castro, Las Mocedas del Cid; Moreto, El Desdén con el Desdén. Open to students who have completed courses 11 and 12.

2 hrs., both semesters (RAMSEY)

15. **Advanced Spanish Composition.**—Ramsey and Lewis, *Progressive Exercises in Spanish Prose Composition*. Open to students who have completed course 11, or its equivalent.

1 hr., both semesters (RAMSEY)

16. **Spanish Themes.**—The course will be conducted entirely in Spanish. Open to students who have completed courses 11, 12, and 13, or their equivalent.

1 hr., both semesters (RAMSEY)

17. **History of Spanish Literature.**—Lectures, with reading of important works and reports by the members of the class. Students should provide themselves with Butler Clarke's *Spanish Literature* (Macmillan & Co., New York). Open to students who have completed course 14, or its equivalent.

3 hrs., both semesters (RAMSEY)

18. **Elementary Italian.**—Sauer, *Italian Grammar*; Bowen's *First Italian Readings*; Manzoni, *I Promessi Sposi*; Goldoni, *Commedie Scelte*; Alfieri, *Oreste*. Open to students who have completed French, course 1, or Spanish 10, or who have received credit for entrance subject 19a.

3 hrs., both semesters (JOHNSTON)

19. **Advanced Italian.**—Dante, *La Divina Commedia*. Open to students who have completed course 18. [Course 19 will not be given in 1903-04.] *2 hrs., both semesters* (JOHNSTON)

TEACHERS' COURSES

20. **Phonetics.**—Lectures on the organs of speech and the nature and formation of speech sounds with practical exercises on the pronunciation of French, German, and English. Intended particularly for teachers of language. Open only to advanced students. *2 hrs., 1st semester* (MATZKE)

21. **Teachers' Course in French.**—Lectures on methods of teaching French, study of the available text-books and practical exercises in teaching French. Open only to advanced students. *2 hrs., 2d semester* (MATZKE)

[Courses 20 and 21 will be given in alternate years.]

GRADUATE COURSES

Courses of instruction for graduate students in Romanic philology and literature lead to the degrees of Master of Arts and Doctor of Philosophy and are planned for the benefit of specialists, particularly of such as are looking forward to becoming college teachers of the Romanic languages. Admission to regular standing in this department presupposes an undergraduate curriculum of study which has included Latin and French, and has afforded proficiency in at least one of the principal languages of the Romanic group (French, Spanish, or Italian). In addition to this, a good reading knowledge of German (for purposes of advanced study) is requisite.

22. **History of Old French Literature.**—Lectures on the history and development of French Literature from the beginning to the end of the fifteenth century.

2 hrs., both semesters (MATZKE)

23. **French Historical Grammar.**—Lectures on Old French Phonology and Morphology. Students should provide themselves with Schwan-Behrens, *Grammaire de l'Ancien Français*, traduction de Bloc (Leipzig, Reisland, 1900), Suchier, *Altfranzösische Grammatik* (Halle, Niemeyer, 1893), Körtling *Lateinisch-Romanisches Wörterbuch* (Schöningh, Paderborn, 1901). One hour every week will be given up to practical philological exercises based on Paris's edition of *La Vie de Saint Alexis* (Paris, Vieweg, 1903), and Suchier's edition of *Aucassin et Nicolette* (Schöningh, Paderborn, 1899).

3 hrs., both semesters (MATZKE)

24. **Old French Texts.**—Translation of Old French texts from Bartsch, *Chrestomathie de l'Ancien Français*, revue par Hornig (Leipzig, Vogel, 1901).

2 hrs., both semesters (JOHNSTON)

25. **Old French Syntax.**—Lectures. [Course 25 will not be given during 1903-04.] *1 hr., 2d semester* (JOHNSTON)

26. **Old French Dialects.**—Lectures and practical exercises. [Course 25 will not be given during 1903-04.]

2 hrs., both semesters (MATZKE)

27. **Old Spanish.**—Old Spanish Grammar with readings from Gorra, *Lingua e Letteratura Spagnuola delle origini* (Hoeppli, Milan, 1898). [Course 27 will not be given during 1903-04.]

2 hrs., both semesters (RAMSEY)

28. **History of the Spanish Theatre.**—Lectures. [Course 28 will not be given during 1903-04.]

1 hr., both semesters (MATZKE)

29. **Seminary.**—In 1902-03 the Seminary was occupied with the study of the Oaths of Strassburg during the first semester and that of Cornelle during the second semester. [In 1903-04 the work of the Seminary will be centered in the Anglonorman Dialect.] *2 hrs., both semesters* (MATZKE)

30. **Journal Club.**—The instructors in the department and the advanced students meet regularly on alternate Thursdays for the discussion of the periodicals and new books.

ENGLISH LITERATURE AND RHETORIC

Professor MELVILLE BEST ANDERSON.

Associate Professor ALPHONSO GERALD NEWCOMER.

Assistant Professor RAYMOND MACDONALD ALDEN.

Instructors SAMUEL SWAYZE SEWARD, JR., LEE EMERSON BASSETT.

WILLIAM JONATHAN NEIDIG, EDWARD KIRBY PUTNAM, GEORGE CRAM COOK.

Assistants LOUIS EUGENE SISSON, ELIAS OLAN JAMES, JOHN KESTER BONNELL.

Requirements for the Degree of Bachelor of Arts

a. The courses in Chaucer, Shakspeare, Milton, the Literature of the Eighteenth Century, the History of English Literature to the time of Dryden, besides such preliminary and other courses as may be requisite in each individual case.

b. Acquaintance with good usage in speech and the ability to write printable English.

c. A sound knowledge of at least one foreign language and its literature.

Teachers' Recommendation in English

In addition to the major requirements for the degree of Bachelor of Arts courses must be taken in Vocal Training, Anglo-Saxon and Linguistic History, Versification, the Literature of the Nineteenth Century, the Teachers' Course in English, English and American History, and some branch of Biology (Physiology preferred).

No candidate who is unable to give a satisfactory vocal interpretation of a piece of literature shall receive the recommendation of the Department.

A. Elementary English Composition.—A course for students deficient in entrance English Composition. All undergraduates who, at the end of their first semester, have not passed entrance English Composition will be required at once to enter this class in Elementary Composition, and to remain in it until their work is judged to be of passing grade. *No university credit is given for this work.* A fee of ten dollars, payable at the beginning of the semester in which the student takes up the work, will be charged.

UNDERGRADUATE COURSES

1. **Principles of Vocal Expression.**—A general course in vocal training, the use of the voice in reading and speaking, and the elements of interpretative reading, with practice in the preparation and delivery of short speeches. Open to all; if so desired, the first semester alone may be taken.

3 hrs., both semesters (BASSETT)

2. **Vocal Training.**—A study of the action of the imagination in the vocal interpretation of literature. Open to all who have passed in course 1. 2 hrs., 1st semester (BASSETT)

3a. **Vocal Interpretation of Literature.**—An appreciative study of a few characteristic poems of Browning and Rossetti. Lectures and readings. Open only by permission.

1 hr., 1st semester (BASSETT)

3b. **Vocal Interpretation of Literature,** based on studies in Shakspeare, Browning, and Tennyson. Open to all who have passed in courses 1 and 2.

2 hrs., 2d semester (BASSETT)

4. **Public Speaking.**—Practice in the preparation and delivery of speeches, with a study of masterpieces of oratory. Open to students who have had the first semester of course 1.

2 hrs., 2d semester (BASSETT)

5. **Introduction to Prose.**—A general course, offering such guidance as is needed by first-year students of all departments. Several of the best English and American authors of the past

century are studied with special reference to the qualities and varieties of prose style. Open to all. *3 hrs., 1st semester*

(SEWARD, NEIDIG, COOK)

6. **Introduction to Poetry.**—With some attention to the elements of poetic form. Open to all.

3 hrs., 2d semester (SEWARD, NEIDIG, COOK)

8. **English Composition.**—Narration, description, and exposition. Practice in taking notes and in making syllabi and abstracts forms a part of the course, the object of which is to develop habits of observation and accuracy of thought, as well as the power of expression. Open to students who have passed in entrance subject 1. *2 hrs., both semesters*

(SEWARD, NEIDIG, PUTNAM, COOK, JAMES)

9. **Exposition and Argument.**—Practice in the preparation and presentation of material in expository and argumentative form, with some study of models. Open to a limited number of students who have passed in course 8.

2 hrs., 1st semester (ALDEN)

10. **Oral Debate.**—Practice in the preparation and delivery of oral arguments, chiefly on current public questions. The work of the debater is criticised by the instructors, with reference to the gathering and handling of material, structure and style, and delivery. Open to a limited number of students, and in general only to those taking, or having taken, course 10.

2 hrs., both semesters (ALDEN, DUNIWAY, BASSETT)

11. **Narration and Description.**—The principles of invention and the philosophy of style in their practical application to various forms of literary art. Open by recommendation from course 8. *2 hrs., both semesters*

(NEIDIG)

12. **Teachers' Course in English.**—Intended primarily for advanced students of English and for such others as satisfy the instructor of their fitness.

2 hrs., 2d semester (SEWARD)

13. **Prosody.**—A study of the principles and history of English versification. Open to English students in the third and fourth years; by permission to others who have passed in course 6. *2 hrs., 2d semester*

(ALDEN)

14. **Formal Prose of the Nineteenth Century.**—A study of critical tendencies in the fields of history, philosophy, art, and

science, based chiefly upon the writings of Macaulay, Carlyle, Emerson, Ruskin, Arnold, and Huxley. Open to second-year students. *2 hrs., both semesters* (NEWCOMER)

15. **The English Novel.**—English prose fiction from Malory to George Eliot. Open to students who have had ten hours in English; to others by permission.

2 hrs., both semesters (PUTNAM)

16. **Early English Drama.**—English dramatic literature from its origin to Shakspere's immediate predecessors. Open to English students in the third and fourth years; to others by permission.

2 hrs., 1st semester (PUTNAM)

17. **Characteristics of Shakspere.**—A comprehensive survey of all the works ascribed to Shakspere, with a view to the illustration of the grounds of his literary supremacy. Open to students who have taken courses 5, 6, and 8; to others by permission.

2 hrs., 1st semester (ANDERSON)

18. **English Literature from 1660 to 1798.**—The age of Dryden and the age of Pope (first semester); the age of Johnson and the early romantic revival (second semester). Open to students who have taken courses 5, 6, and 8 (preferably also 14), or their equivalent.

3 hrs., both semesters (ALDEN)

19. **Representative English Poets of the Nineteenth Century.**—
a. Keats, Arnold, Rossetti, Morris, Swinburne (first semester).
b. Tennyson (second semester). Lectures, discussions, and weekly papers. Open to English students in the third and fourth years; to others by permission.

3 hrs., both semesters (NEWCOMER)

20. **English Literature from 1798 to 1832.**—The age of Coleridge, Byron, Scott, and the Reviewers. Open to students of all departments in third and fourth years.

1 hr., both semesters (ALDEN)

21. **American Literature.**—A survey of American literary history; lectures and reports. Students are expected to possess the works of the chief poets, especially Bryant, Poe, Longfellow, Whittier, Emerson, Lowell, Whitman, and Lanier. Open to those who have taken courses 5, 6, and 8, or their equivalent.

3 hrs., both semesters (COOK)

22. **Wordsworth and Shelley.**—Lectures and interpretations.

Open to students of all departments in the third and fourth years. [The Globe edition of Wordsworth, the Cambridge edition of Shelley.] *1 hr., both semesters* (ANDERSON)

23. **Introduction to the Poetry of Robert Browning.**—Open to English students in the third and fourth years and to students of other departments by permission. [Not to be given in 1903-04.] *3 hrs., 1st semester* (ANDERSON)

24. **Milton.**—*a.* The early poems, *Paradise Regained*, *Samson Agonistes*. *b.* *Paradise Lost*. [*a* and *b* alternate; the latter will be given in 1903.] *3 hrs., 1st semester* (ANDERSON)

25. **Shakspeare: Reading and Interpretation.**—The plays and poems are grouped in four distinct courses, each illustrating the author's range and the development of his art. It is optional with the student to pursue these courses in successive years, as follows:

a. (1903). *The Two Gentlemen of Verona*, *The Merchant of Venice*, *All's Well that Ends Well*, *King John*, *Romeo and Juliet*, *Hamlet*, *Cymbeline*.

b. (1904). *The Comedy of Errors*, *The Merry Wives of Windsor*, *Much Ado About Nothing*, *Richard III*, *Julius Cæsar*, *Macbeth*, *Antony and Cleopatra*, *The Winter's Tale*.

c. (1905). *The Taming of the Shrew*, *Richard II*, *Twelfth Night*, *Measure for Measure*, *King Lear*, *Troilus and Cressida*, *Coriolanus*, *The Sonnets*.

d. (1906). *Love's Labor Lost*, *A Midsummer-Night's Dream*, *1 Henry IV*, *2 Henry IV*, *Henry V*, *As You Like It*, *Othello*, *The Tempest*.

Open to all who have passed in course 17; to others by permission. *3 hrs., 2d semester* (ANDERSON)

26. **The History of English Literature from the Beginning to the Restoration.**—Lectures. Open to students of English in the fourth year; to others by permission.

2 hrs., both semesters (FLÜGEL, ANDERSON)

27. **Thesis.**—In connection with the more advanced courses in literature the student may, by special permission of the instructor, undertake a piece of research, the results of which shall be embodied in a thesis. *1 hr., either semester*

(ANDERSON, NEWCOMER, ALDEN)

GRADUATE COURSES

The preliminary requirements for entrance upon a course for an advanced degree in English are:

a. The course for the degree of A. B. in English, or its equivalent;

b. An elementary knowledge of Anglo-Saxon;

c. A sound knowledge of two foreign languages (preferably one ancient and one modern language).

28. *The Development of English Prose*, from the middle of the sixteenth century to the end of the eighteenth. Open to graduates, and to advanced undergraduates by permission.

2 hrs., both semesters (NEWCOMER)

29. *The English Drama*.—In the spring semester, 1903, the text of the play of Hamlet was critically examined. In 1903-04 it is proposed to make a textual study of King Lear, and probably of one other play by Shakspeare.

This is a seminary for graduate students, but is open by permission to advanced undergraduates. (Viotor's Shakspeare Reprints and Furness's Variorum Edition.)

3 hrs., both semesters (ANDERSON)

30. *Literary Criticism*.—The history of English literary criticism, from the Elizabethan age to that of Matthew Arnold. The work consists of lectures and seminary reports. Open to graduate students, and to advanced undergraduates by permission.

2 hrs., both semesters (ALDEN)

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 ENGLISH PHILOLOGY

Professor EWALD FLÜGEL.

Instructors SAMUEL SWAYZE SEWARD, JR., EDWARD KIRBY PUTNAM.

UNDERGRADUATE COURSES

1. *Anglo-Saxon*.—a. Anglo-Saxon Grammar and translation of select passages in prose (first semester). b. Translation of select passages in prose and verse; outline of Historical English Grammar (second semester).

3 hrs., both semesters (SEWARD)

2a. Chaucer.—This course is an elementary one, and includes an outline of Middle English Grammar for the beginner. Students having completed this course will be admitted in the second semester to the advanced course in Chaucer. Open to third-year students. *2 hrs., 1st semester* (FLÜGEL)

2b. Special Work in Chaucer.—An additional hour of credit will be given to students registered in course 2a for additional work to be specially assigned.

1 hr., 1st semester (FLÜGEL)

3. History of Early English Literature.—Given as the first semester's work of course 26 in English Literature and Rhetoric.

2 hrs., 1st semester (FLÜGEL)

ADVANCED COURSES

4. Chaucer (Advanced Course).—Introduction to the study of Chaucer MSS. Interpretation of the prologue to the Canterbury Tales, alternating with an interpretation of some of the minor poems and lectures on the History of Chaucer Criticism.

2 hrs., 2d semester (FLÜGEL)

5. Beowulf. *2 hrs., 1st semester* (FLÜGEL)

7. English Ballads.—Lectures on the History of English Popular Poetry from the Earliest Times to the Eighteenth Century.

2 hrs., 1st semester (FLÜGEL)

8. History of English Prose Literature: From Malory to Tindale, including the History of the English Bible.

2 hrs., 2d semester (FLÜGEL)

10. Historical English Grammar.—Lectures.

2 hrs. both semesters (FLÜGEL)

11. Middle English Exercises.

2 hrs. both semesters (FLÜGEL, PUTNAM)

12. History of English Philology.—Lectures.

1 hr., both semesters (FLÜGEL)

PHILOSOPHY

Associate Professor CHARLES HENRY RIEBER.

Lecturers CHARLES REYNOLDS BROWN, DAVID CHARLES GARDNER.

1. **Elementary Logic.**—Lectures, text-book, and recitations. The lectures will treat in an elementary way of the general character of the thinking process. In the work with the text-book considerable attention will be given to the analyses of logical arguments and the detection of fallacies.

2 hrs., 1st semester (RIEBER)

2. **The Logic of Science.**—A study of the inductive methods, their nature and scope; the presuppositions, aims, and methods of the various sciences; the philosophic significance of the scientific results. Open to students who have completed course 1, or its equivalent.

2 hrs., 2d semester (RIEBER)

3. **Introduction to Philosophy.**—Intended for the general student who wishes to know something about the main problems of Philosophy and their typical solutions. The chief object of the course will be to acquaint the student with the attitude and method of philosophical discussion and to offer an introduction to the literature of the subject. Not open to first-year students.

2 hrs., 2d semester (RIEBER)

4. **History of Philosophy.**—From the Ionian schools to the present century. Text-book, lectures, and prescribed reading.

2 hrs., both semesters (RIEBER)

5. **Philosophical Undercurrent of the Literature of the Nineteenth Century.**—Lectures, discussions, and reports on selected reading chiefly from Emerson and Browning. Open only to students who have taken either course 3 or course 4.

2 hrs., 1st semester (RIEBER)

6. **Ethics.**—A study of the principal systems of Ethics, chiefly in the light of their origin and development. The work of the course will be based on Palmer's *Field of Ethics* and Sidgwick's *History of Ethics*. [Not to be given in 1903-04.]

2 hrs., 1st semester (RIEBER)

7. **Philosophy of Religion.**—The parts of course 7, while constituting one course, may be taken separately.

a. *Descriptive and Historical.*—A study of the phenomena of religion and their significance, with some sketch of the princi-

pal religious systems of the world. Lectures and special reading. *2 hrs., 1st semester* (RIEBER)

b. Theoretical.—A study of the nature and validity of the conception of God, with special reference to representative modern theories, in which extensive reading will be required.

2 hrs., 2d semester (RIEBER)

8. Hume and Kant.—A study (as careful as time permits) of the Treatise of Human Nature, Part I, and the Critique of Pure Reason, with some work in the development of Idealism in Germany after Kant. For advanced students only.

2 hrs., 2d semester (RIEBER)

9. Seminary.—The fundamental problems of Speculative Philosophy. Realism and Idealism; Freedom and Determinism; Agnosticism and Theism. Howison's Limits of Evolution, Bradley's Appearance and Reality, Royce's The World and the Individual. [Not given in 1903-04.]

2 hrs., both semesters (RIEBER)

10. Life and Teaching of Christ.—The history of the life and times of Jesus, with a study of his words as recorded in the gospels and the application of his teaching to the life of to-day. Lectures, discussions, and papers, with a study of the religious forces in modern society.

1 hr., both semesters (GARDNER)

11. The Ethics of Christ.—The aim of the course is three-fold: to study the conduct and teaching of Christ as an exponent of morals; to interpret his words according to correct literary methods; and to apply the principles he inculcated to our present life. The materials for this study are the Four Gospels, and the consideration of those concrete human relations upon which their contents bear.

1 hr., 2d semester (BROWN)

12. The Life and Literature of the Earlier Hebrews.—A study of the historical, poetical, didactic, and prophetic books of the Old Testament according to modern literary methods. The life of the Hebrew people is studied, so far as material is available, from patriarchal times down to the revolt of the Maccabees, together with the literature of the various periods. The limits of the course do not permit the discussion of technical questions of analysis, but students are instructed in the meth-

ods of modern Biblical study and in the results of recent scholarship in determining the processes which entered into the composition of this literature. The bearing of these results on the moral and religious life of our own time is naturally considered. The lectures are supplemented by a certain amount of suggested reading and of investigation by each student. [Course 12 alternates with course 11 and was given in 1901-02.] *1 hr., 2d semester* (BROWN)

13. **Social Ethics.**—A study of moral values as expressed and developed in the various domestic, industrial, political, philanthropic, and other social relations of common life. The general method is inductive and practical, addressing itself mainly to the study of conduct in its results. [Given in 1902-03.] *1 hr., 2d semester* (BROWN)

PSYCHOLOGY

Professor FRANK ANGELL.

Assistant Professor LILLIEN J. MARTIN.

1. **General Psychology.**—Not open to first-year students.
3 hrs., both semesters (ANGELL)
2. **Beginner's Laboratory Work.**—In connection with course 1.
2 hrs., both semesters (ANGELL, MARTIN)
3. **Psychology of Humor.**—Open to those who have completed course 1, or its equivalent.
2 hrs., 2d semester (MARTIN)
4. **Advanced Laboratory Work in Psychology.**
3 hrs., both semesters (ANGELL, MARTIN)
5. **Psychology of the Emotions,** with special reference to Aesthetics.
2 hrs., 1st semester (MARTIN)
6. **Psychology of the Social Relations.**
2 hrs., 2d semester (MARTIN)
7. **Reading of German Psychology.**—(No credit.)
1 hr., both semesters
8. **Comparative Psychology.**—Open to those who have completed one year's work in Psychology.
2 or 3 hrs., 1st semester (MARTIN)

EDUCATION

Associate Professor ELLWOOD P. CUBBERLEY.

Assistant Professors EDWIN DILLER STARBUCK, DAVID SAMUEL SNEDDEN.

Instructor ANTHONY HENRY SUZZALLO.

Only graduates and teachers of experience who desire to prepare for administrative work or for work in Education in Normal Schools, and whose preparation and experience are satisfactory to the Department, will be accepted as major students in Education.

The courses in Education are open to all students as electives or as minor subjects, but except in the above special cases the major subject should be chosen elsewhere.

1. **Introduction to Educational Theories and Practice.**—Lectures, assigned reading, and discussion. A study of educational principles and their application to the work of teaching, with a general consideration of the means and purposes of public education. This is an introductory course, and should precede other courses in the Department. Open to second-year students. Required for the Teachers' Certificates unless a substitution is allowed.

2 hrs., both semesters (CUBBERLEY)

2. **History of Education in Europe.**—Lectures following a syllabus, assigned readings, and reports. A study of the development of educational ideals and systems from early times to the present, with particular reference to the forces which have operated in the evolution of the various historic ideals and types of schools. Open to second-year students.

3 hrs., both semesters (CUBBERLEY)

3. **History of Education in America.**—Individual investigation of selected problems in the history of administration and the development and extension of supervision in America. [This course will not be given in 1903-04.]

2 hrs., both semesters (SUZZALLO)

4. **Elementary Schools.**—Lectures, reports, and discussions. A study of prevailing aims, organization, and methods in elementary schools. There will be included some discussion of current problems in elementary education, and of the general

principles of method underlying the special methods in elementary subjects. This course should be taken by those who are preparing to teach in elementary schools.

3 hrs., 1st semester (SNEDDEN)

5. Secondary Schools.—A study of the work of the American secondary school in its various aspects, as preparatory, culture, commercial, manual training, and industrial; the purpose, value, and limitations of the various subjects of study; the work of teachers and principal; and the administration of secondary education. Open to fourth-year students. This course should be taken by those who are preparing to teach in secondary schools.

3 hrs., 2d semester (SNEDDEN)

6. School Management.—A practical course dealing with the relations of teachers to pupils, community, trustees, and superintendent, with particular reference to conditions prevailing in California. This will include a study of the essential features of California school law.

2 hrs., 2d semester (SNEDDEN)

7. Education and Society.—A study of educational institutions in their relations to social development. Special attention will be given to the effects of recent social changes upon educational aims and practice. The various attempts to make education more effective for social purposes will be investigated, and also the special problems connected with the education of negroes, foreigners, and socially defective classes. Open to third-year students.

2 hrs., both semesters (SNEDDEN)

8. Courses of Study for Elementary Schools.—The more fundamental principles of education are studied with reference to their application to the formation and administration of courses of study for elementary schools. Each member of the class will carry on during the year a special study in some one subject of the elementary curriculum. A Saturday morning class, open only to teachers of experience. [Alternates with course 9, and will not be given in 1903-04.]

2 hrs., both semesters (SNEDDEN)

9. The Principles of General Method.—An examination of the principles of general method and their application to actual teaching. The work will involve a critical study of some of the recent contributions to educational literature, and the ap-

plication of the principles of method to class-room work. A Saturday morning class, open only to teachers of experience.

2 hrs., both semesters (SNEDDEN)

10. **City School Administration.**—A study of some of the problems of city school administration, with visits to a few city systems in the vicinity. Intended primarily for those preparing for administrative work. Students should consult the instructor before registering.

2 hrs., 1st semester (CUBBERLEY)

11. **American School Systems.**—A comparative study of the chief features of American State school systems, with a view to discovering the points of strength and weakness in each. The course is primarily a study of State school administration, and is intended for those preparing for administrative work. Students should consult the instructor before registering.

2 hrs., 2d semester (CUBBERLEY)

12. **Thesis Work.**—In certain courses, students will be given an additional hour of credit on presentation of a satisfactory thesis on an assigned topic, and embodying the results of independent work. This work is intended primarily to drill students in methods of independent investigation. The consent of the instructor is necessary before registering. Credit for thesis work will not be accepted as part of the required hours for the Teachers' Certificate.

1 hr., both semesters

13. **Special Courses.**—Special work in independent research will be provided for students prepared to do advanced work, the nature of the investigation being determined by the student's preparation and needs. Such work will include studies in administration, statistics, educational history, and the curriculum.

Hours to be arranged

(CUBBERLEY, SNEDDEN)

APPLIED PSYCHOLOGY

14. **Educational Psychology.**—The problems of education and the practice of teaching considered from the standpoint of some of the facts of psychology and physiology.

3 hrs., 1st semester (STARBUCK)

15. Child Study.—A consideration of the lines of growth of the various powers and functions of children, the characteristics of the different growth periods, and their bearing upon the work of teaching.

3 hrs., 2d semester (STARBUCK)

16. Moral Education.—A discussion of the means of developing the moral life through the materials available in the common schools. The practical observations are the outgrowth of a study of the elements that enter into morality and the way it develops in the race and individual. [Alternates with course 17. Not to be given in 1903-04.]

2 hrs., both semesters (STARBUCK)

17. Herbart, Pestalozzi, and Froebel.—An exposition of the doctrines of these men, together with their influence on later and recent educational theory. The course will include a discussion of the kindergarten and a criticism of its methods. [Alternates with course 16. To be given in 1903-04.]

2 hrs., both semesters (STARBUCK)

18. Mental and Physical Tests of School Children.—A presentation of such methods as superintendents, principals, and teachers may employ in order to understand children's defects, capacities, and needs. The work will consist of two hours of lectures with demonstrations and one period of laboratory work.

3 hrs., 2d semester (STARBUCK, SNOW)

19. Seminary in the Psychology of Childhood.—Researches chiefly by experimental methods, on the development of children.

3 hrs., both semesters (STARBUCK)

COURSES IN OTHER DEPARTMENTS

The following courses in other departments will be accepted as part of the work of the Department of Education, though not more than four hours of such courses will be accepted for the Teachers' Certificate.

a. Nature Study.—A course of practical work in nature study for students who expect to teach the subject in the public schools. Students must receive the permission of the instructors to register for this course. Presupposes at least one year of laboratory science. One two-hour lecture and demonstration period weekly. [Given by Professor JENKINS, of the Depart-

ment of Physiology, and Professor KELLOGG, of the Department of Entomology.] *1 hr., 2d semester*

b. Teachers' Course in Greek.—[See course 14 in the Department of Greek.] *2 hrs., 1st semester* (MURRAY)

c. Teachers' Course in Latin.—[See course 14 in the Department of Latin.] *2 hrs., 2d semester* (ELMORE)

d. Teachers' Course in German.—[See course 10 in the Department of Germanic Languages.]

2 hrs., 1st semester (GOEBEL)

e. Teachers' Course in French.—[See course 21 in the Department of Romanic Languages.]

2 hrs., 2d semester (MATZKE)

f. Teachers' Course in English.—[See course 12 in the Department of English.] *2 hrs., 1st semester* (SEWARD)

g. Teachers' Course in Elementary Physics.—[See course 13 in the Department of Physics.]

1 hr., both semesters (SANFORD)

THE TEACHERS' RECOMMENDATION

[For regulations governing recommendation for the High School Teacher's Certificate, see p. 66.]

HISTORY

Professors MAX FARRAND, ARLEY BARTHOLOW SHOW.

Associate Professors CLYDE AUGUSTUS DUNIWAY, EPHRAIM DOUGLASS ADAMS.

Instructor *HENRY LEWIN CANNON.

1. Ancient History.—A general outline course, open to first-year students.

3 hrs., both semesters (CANNON)

2a. History of Greece.—A general outline course, open to first-year students. [Not given in 1903-04.]

3 hrs., both semesters (CANNON)

2b. History of Rome.—A general outline course, open to first-year students. [Not given in 1903-04.]

3 hrs., both semesters (CANNON)

*Beginning August, 1903.

3a. The Early Middle Ages, 476-1095.—A general course, open to all students who have had one year in ancient history, or a satisfactory equivalent.

3 hrs., 1st semester (SHOW)

3b. The Later Middle Ages, 1095-1492.—A continuation of course 3a. Open to all students who have had course 3a, or a satisfactory equivalent.

3 hrs., 2d semester (SHOW)

4a. English History to 1845.—General outline course, open to first-year students.

3 hrs., 1st semester (CANNON)

4b. English History Since 1845.—A continuation of course 4a.

3 hrs., 2d semester (CANNON)

5a. Modern European History, 1500-1715.—A general outline course, open to students who have had courses 3a and 3b, or a satisfactory equivalent.

2 hrs., 1st semester (ADAMS)

5b. Modern European History, 1715-1900.—A continuation of course 5a.

2 hrs., 2d semester (ADAMS)

6. American Colonial and Revolutionary History to 1783.—Open to students who have taken courses 4a and 4b, or a satisfactory equivalent. [Not given in 1903-04.]

3 hrs., both semesters (DUNIWAY)

6a. American Colonial and Revolutionary History, 1755-1783.—Open to all but first-year students. After 1903-04 it will be given as the latter part of course 6.

3 hrs., 1st semester (DUNIWAY)

7. United States History, 1783-1844.—Open to students who have taken courses 4a and 4b, or a satisfactory equivalent.

3 hrs., 1st semester (FARRAND)

8. Constitutional and Political History of the United States Since 1844.—A continuation of course 7.

3 hrs., 2d semester (DUNIWAY)

[Courses 7 and 8 will alternate with course 6. Together they will afford a survey of the field of American History.]

9. The Westward Movement in United States History.—The influence of the West upon the development of the United States. Not open to first-year students.

3 hrs., 2d semester (FARRAND)

10. **Pacific Slope History.**—Open to all but first-year students.
[Not given in 1903-04.]

3 hrs., 2d semester (DUNIWAY)

12. **Empire and Papacy in Middle Ages.**—Open to third-year students, who have taken courses 3a and 3b. Subject in 1903-04, "The Investiture Struggle."

2 hrs., 1st semester (SHOW)

13. **Italian Renaissance.**—Open to third-year students, who have taken courses 3a and 3b. A reading knowledge of German and Italian is desirable, but is not required.

2 hrs., 2d semester (SHOW)

14. **Europe Since 1789.**—A selected subject for some particular period is studied. The subject for 1902-03 was "The Influence of English Parliamentary Opinion on Foreign Policy from 1815 to 1830." Open to third-year students, who have taken courses 5a and 5b.

2 hrs., 1st semester (ADAMS)

15. **European Constitutions.**—A comparative study of some selected feature of the constitutions of the more important states of continental Europe. Subject in 1903-04, "Limitations on Executive Authority." Open to third-year students, who have taken courses 5a and 5b.

2 hrs., 2d semester (ADAMS)

18. **Diplomatic History of the United States.**—Primarily for third- and fourth-year students, who must have had at least two courses in modern history.

3 hrs., 2d semester (DUNIWAY)

19. **International Law.**—Primarily for third- and fourth-year students, who must give evidence of a fair knowledge of modern history. It is mainly a study of the leading cases, with class discussion to develop (1) a statement of the general principles of international law, and (2) an outline of the history of the subject.

4 hrs., 1st semester (DUNIWAY)

20. **Oral Debate.**—Open to a limited number of advanced students, and should be preceded by English 10. The course is intended to give training in the preparation of oral arguments on public questions in the fields of history, politics,

economics, and sociology, and to afford experience in public speaking, with the benefit of criticism by the instructors.

2 hrs., both semesters (DUNIWAY, ALDEN, BASSETT)

21. **Historical Composition.**—Every student taking history as a major subject is required to register with some instructor in the department for regular training in the gathering, critical handling, and presentation of historical material. The exact method to be followed will be determined by the instructor according to the needs of the individual student.

1 hr., each semester

22. **Historical Bibliography and Criticism.**—Open to third- and fourth-year students.

2 hrs., 1st semester (FARRAND)

23. **Teachers' Course.**—Open only to advanced students. [Not given in 1903-04.]

2 hrs., 2d semester (SHOW)

ADVANCED COURSES

Intended primarily for graduate students, but open to advanced undergraduates, with permission of the instructors.

27. **Painting of the Italian Renaissance.**—A critical study of the life and works of one or more of the Florentines of the fifteenth century. Ability to read German and French is desirable.

2 hrs., both semesters (SHOW)

28. **Feudal Institutions.**—A practical study of select problems in the early history of feudalism. Ability to read Latin, German, and French is required.

1 hr., each semester (SHOW)

30. **English Constitutional History, Tudor and Stuart Periods.**—The course consists mainly of interpretation and discussion of original documents. [Not given in 1903-04.]

4 hrs., 1st semester (DUNIWAY)

31. **Nineteenth Century English History.**—Subject in 1903-04, "The Relation of Parties to Industrial Legislation before 1830."

2 hrs., both semesters (ADAMS)

32. **Constitutional History of the United States.**—Subject for first semester, 1903-04, "Territorial Government." Subject for second semester, "Internal Improvements."

2 hrs., each semester (FARRAND)

33. **The Westward Movement.**—Each semester some phase of the westward development of the United States will be studied. *2 hrs., each semester* (FARRAND)

35. **Seminary in Modern European History.**—Subject in 1903-04, "English Diplomatic Action during the French Revolution—First Period, 1788-1793." Reading ability in French required. *2 hrs., both semesters* (ADAMS)

37. **Seminary in Later United States History.**—Subject in 1903-04, "History of Parties and Party Questions Since 1865." *2 hrs., both semesters* (DUNIWAY)

38. **Seminary in Pacific Slope History.**—This course will be devoted to co-operative study of some one topic. [Not given in 1903-04.] *2 hrs., both semesters* (DUNIWAY)

39. **History Club.**—The instructors in the department and advanced students will meet monthly for reports on current historical literature and for the discussion of subjects of historical interest.

ECONOMICS AND SOCIAL SCIENCE

Associate Professors SIMON JAMES MCLEAN; MARY ROBERTS SMITH.

Assistant Professor HENRY ALVIN MILLIS.

Instructors ALBERT CONSER WHITAKER, CEPHAS DANIEL ALLIN.

Note.—All courses in Economics, in advance of Economics 1, presuppose that the student has taken Economics 1.

1. **Elements of Economics.**—An introduction to the subject, designed for the general student as well as for those specializing in the department. Not open to students in their first year.

3 hrs., both semesters (MCLEAN, MILLIS)

2. **History of English Political Economy.**—The mercantilists and other precursors of Adam Smith, including the French physiocrats. Selected readings from the chief English "Principles" of Political Economy.

2 hrs., 2d semester (WHITAKER)

3. **Economic Theory.**—Nature and method of economic investigation; the "Historical School"; relation of economic theory to other branches of economics; fundamental theoreti-

cal notions; the theory of value and of distribution, especial attention being paid to recent thought on these subjects. The problem of distribution will consume the larger part of the time of the course. Readings, short reports, and discussions, with lectures. Preferably taken in senior year.

2 hrs., both semesters (WHITAKER)

4. **Money, Banking, and Corporation Finance.**—Functions of money; principles of a modern monetary system; money in foreign commerce, foreign exchange, and the international distribution of money; silver question, bimetallicism, the gold standard. The mechanism of credit and elementary theory of banking. Description of credit instruments; dealings in bonds and stocks; the financing operations of modern business corporations. The United States national bank system; comparison with principal foreign systems; general relation of United States Treasury to banking and the operations of the "money market"; present proposals of change of system.

3 hrs., both semesters (WHITAKER)

5. **American Transportation: Its History and Problems.**—The evolution of the railway system; railway geography; rate-making; governmental regulation; railway finances; the economic effects of water transportation, etc. Lectures, prescribed readings, and use of Railroad Commission Reports.

3 hrs., both semesters (MCLEAN)

6. **Commerce.**—Theory of foreign commerce; mechanism of the exchanges; study of commercial routes; investigation of the commercial resources of some of the more important countries. Students will be expected to familiarize themselves with the United States Consular Reports. [Not to be given in 1903-04.] *3 hrs., 2d semester* (MCLEAN)

6a. **Industrial and Commercial Development of the Pacific Coast.**—Economic side of the history of the Pacific States; present industrial and commercial resources of these states; American commerce on the Pacific with China and the Orient and through the Isthmian Canal. Lectures and reports.

3 hrs., 1st semester (WHITAKER)

7. **Socialistic Theories.**—History of socialistic doctrine and agitation, and of socialistic experiments; criticism of the doctrine, especially in the light of received economic theories of

value and distribution; history and theories of private property; study of the extension of modern state activities into the realm of industry; readings from leading socialists and their critics. [Not given in 1903-04.]

2 hrs., both semesters (WHITAKER)

8. **Public Finance.**—Expenditures, revenues, public debts, and financial administration, with especial reference to the practice of national governments. Text-book work, lectures, and assigned readings.

3 hrs., 1st semester (MILLIS)

9. **Local Finance.**—This is a continuation of course 8. The object will be to make a comparative study of local finance in America and in European countries, and to familiarize the student with American practice. Lectures and assigned readings.

3 hrs., 2d semester (MILLIS)

10. **Industrial History of England.**—The several stages in the industrial evolution of England will be studied, particular attention being given to the Industrial Revolution, and to the modern capitalistic system. Lectures and supplementary reading.

2 hrs., 1st semester (MILLIS)

11. **The Labor Problem.**—The course will cover the modern industrial system, wage system, collective bargaining, and other features of trade unionism, strikes, boycotts and lock-outs, arbitration and conciliation, factory legislation, workmen's insurance, profit-sharing, co-operation, and socialism. Lectures and assigned readings.

2 hrs., 2d semester (MILLIS)

12. **Sociology of the Family.**—The historical development and conditions of the modern family. Lectures, one required paper, and assigned reading. Open to second-year students.

2 hrs., 1st semester (M. R. SMITH)

13. **Race Problems.**—A historical, sociological, and statistical study of the negro and Chinese elements in the population. Lectures, assigned reading, and reports. Open to second-year students.

2 hrs., 2d semester (M. R. SMITH)

14. **Household Economics.**—Elementary principles of economics, hygiene and sanitation, bacteriology, chemistry and physiology, architecture and decoration as applied to the household.

Lectures, assigned reading, and reports. Not open to first-year students. [Not given in 1904.]

2 hrs., 2d semester (M. R. SMITH)

15. **Causes of Poverty; Charities.**—A study of the social causes and effects of degeneration, vice, and pauperism; and of charitable and remedial institutions. Visits to charitable institutions and a detailed study of one institution by each student. Open to third- and fourth-year students only.

3 hrs., 1st semester (M. R. SMITH)

16. **Crime and Penology.**—The anthropology of the criminal, and the causes and conditions of crime; treatment of criminals; police, prisons, and reformatories. Lectures, reading, and study of local penal institutions. Open to third- and fourth-year students only.

3 hrs., 2d semester (M. R. SMITH)

17. **Seminary in Social Science.**—The work of the Seminary for 1903-04 will consist either of a study of the statistics of Crime, Pauperism, and Benevolence, Census, 1900, or of the Chinese in America from documentary and pamphlet materials.

2 hrs., both semesters (M. R. SMITH)

18. **Thesis.**—In certain courses students are given an additional hour of credit on presentation of a satisfactory thesis embodying the results of independent work. Permission to register for thesis work must be obtained in each case from the major professor.

1 hr., either semester

19. **Seminary in Transportation.**—The subject for 1903-04 will be "Railway Rate Regulation in the United States." Open to graduate and fourth-year students, who have taken the course in Transportation.

2 hrs., both semesters (MCLEAN)

20. **American Government.**—A study of the American federal, state, and local political institutions. Open to first-year students. [Not to be given in 1903-04.]

2 hrs., 2d semester (ALLIN)

21. **Federal Government.**—A study of the principles of federal government; a brief historical review and comparative study of the constitutions of the great modern federal states. Open only to advanced students. [Not to be given in 1903-04.]

2 hrs., both semesters (ALLIN)

22. **English Constitutional Law.**—A study of the law and custom of the English constitution. This course is intended to give the student a preliminary knowledge of the leading principles of the English constitution. Open to first-year students. [Not to be given in 1903-04.]

2 hrs., 1st semester

(ALLIN)

23. **Elements of International Law.**—This course will develop a statement of the sources and nature of International Law; a brief review of its history; an examination of the leading general principles of law as expressed in the usage of nations and in judicial decisions. Open only to advanced students having a fair knowledge of modern history. [Not to be given in 1903-04.]

2 hrs., both semesters

(ALLIN)

LAW

Professor NATHAN ABBOTT.

Assistant Professors CHARLES ROSS LEWERS, JOHN ELLWOOD BLAIR.

Instructors JAMES TAYLOR BURCHAM, GEORGE LUTHER CLARK.

This Department* offers a three years' course of professional study leading to the degree of Bachelor of Laws and constituting a thorough preparation for the practice of law. The degree of Bachelor of Arts, or its equivalent, from this or from some other institution of recognized collegiate rank, is ordinarily a prerequisite to obtaining the degree of Bachelor of Laws. The first year of the law course, however, may be taken by undergraduates in the University and counted toward the degree of Bachelor of Arts. An exception also is made in the case of students over twenty-one years of age, as stated below.

Admission to the Courses in Law

There is no admission to the Department of Law independent of admission to the University. The student whose major subject is Law must enter the University either as an undergraduate, graduate, or special, according to the requirements stated

*The Law Department of the Leland Stanford Junior University is a member of the Association of American Law Schools.

on pp. 32-54. He is advised to enter in August, as the law courses begin then and continue throughout the year.

Undergraduates who intend to count one year of law work toward the degree of Bachelor of Arts pursue, under the advice of the Faculty of Law, a general course of study preparatory to law. English Composition (English 8) is required, and should be taken as early as possible. To such undergraduates work in law is open only as follows: in their first year in the University, none; second year, Elementary Law; third year, Contracts and Criminal Law; fourth year, Property I, Torts, and Equity I; comprising altogether the first year of the law course. After receiving the degree of Bachelor of Arts, the student completes the second and third years of the law course, and becomes entitled to the degree of Bachelor of Laws.

Students entering with advanced standing from other institutions may take such law work as would be open to students with an equal standing obtained in this University.

Only the law courses enumerated above may ordinarily be counted toward the degree of Bachelor of Arts, but, by special permission of the Faculty of Law, students not intending to practice law may substitute such courses as will aid them in other pursuits.

Students admitted to graduate standing in the University may complete the law course in three years receiving the degree of Bachelor of Laws.

Regular students over twenty-one years of age and special students may, by special permission, complete the law course in three years, without doing other University work; but degrees will be conferred upon such students only as stated below under "Degrees."

In general the second-year courses are open only to students who have completed all the first-year courses, and the third-year courses are open only to students who have completed at least five second-year courses. Such students may also take other second-year courses.

No credit will be given for work not done in residence except by special permission.

[For the present, some of the second- and third-year courses are given only in alternate years, so it may be necessary for

students admitted to the second-year courses to take some third-year courses, and *vice versa*.]

Work in Law Done Elsewhere

Work in law done elsewhere will not be accepted by the Department, except upon satisfactory examination in all the subjects offered; but students who have done law work elsewhere may be admitted provisionally to such courses here as their previous work justifies. Examinations may be taken as follows: (a) in *all* subjects at the end of the spring semester, in May; (b) in *first-year* subjects at the opening of the fall semester, in August; (c) on request, entering students will be given examinations in second- and third-year subjects at the opening of the fall semester. By special permission, any of these examinations may be taken elsewhere, but application for such permission must be made not later than April 1 for the spring examinations, and August 1 for the fall examinations. For these examinations the applicant should prepare himself by a study of the books used in the several courses.

Moot Courts

Voluntary moot courts are held under the advice of the Law Faculty, and it assists in the selection of cases for argument.

Library

The Law Library contains complete sets of all English and Irish reports, and those of the leading American jurisdictions, most of the Canadian reports, all the recent American reports, and a large number of text-books and works of reference on legal topics.

Degrees

Students of the University whose major subject is Law, on completing the first-year law courses, English 8, and satisfying all other University requirements, will receive the degree of Bachelor of Arts.

Students who have received the degree of Bachelor of Arts, or its equivalent, from this or from some other institution of recognized collegiate rank, and who have completed fifteen courses in law, exclusive of Elementary Law and the Special Courses in Law, will be given the professional degree of Bachelor of Laws.

Regular students over twenty-one years of age and special students who have completed fifteen courses in law including the first year's courses, with distinguished excellence, in residence at the University, will also be given the degree of Bachelor of Laws.

PRELIMINARY COURSE

1. **Elementary Law.**—Lectures. No text-books. This course is designed to give students in the Law Department an introduction to the regular courses in law, and to give other students some general legal conceptions. Three lecture hours weekly. [Open to students of all departments who have twenty hours of University credit.] *2 hrs., both semesters*

(ABBOTT, LEWERS, BLAIR, BURCHAM, CLARK)

FIRST-YEAR COURSES

2. **Contracts.**—Text-book: Williston's Cases on Contracts.

3 hrs., both semesters (CLARK)

3. **Criminal Law and Procedure.**—Text-book: Beale's Cases on Criminal Law. May's Criminal Law is recommended for reading in connection with this course.

3 hrs., both semesters (LEWERS)

4. **Torts.**—Text-book: Ames and Smith's Cases on Torts.

3 hrs., both semesters (CLARK)

5. **Property I.**—Text-book: Gray's Cases on Property, Vols. I and II.

3 hrs., both semesters (ABBOTT)

6. **Equity I.**—Text-book: Keener's Cases on Equity Jurisdiction, Vol. I.

2 hrs., both semesters (BURCHAM)

SECOND-YEAR COURSES

7. **Agency.**—Text-book: Wambaugh's Cases on Agency.

2 hrs., both semesters (BURCHAM)

8. **Bills and Notes.**—Text-book: Ames's Cases on Bills and Notes.

3 hrs., both semesters (BURCHAM)

b. **Public Service Companies.**—Text-book: Beale and Wyman's Cases.

These two subjects, taken together, comprise one course and cannot be taken separately. [Omitted in 1903-04.]

2 hrs., both semesters (LEWERS)

10. **Equity II: Trusts.**—Text-book: Ames's Cases on Trusts.

2 hrs., both semesters (LEWERS)

11. Evidence.—Text-book: Thayer's Cases on Evidence (2d ed.). This course, when possible, should be preceded by Pleading. *3 hrs., both semesters* (BLAIR)
12. Persons.—Text-book: Woodruff's Cases. [Omitted in 1903-04.] *2 hrs., both semesters* (ABBOTT)
13. Pleading.—Text-book: Ames's Cases. *2 hrs., both semesters* (CLARK)
14. Property II.—Text-book: Gray's Cases on Property, Vols. III and IV. *3 hrs., both semesters* (ABBOTT)
15. Sales.—Text-book: Williston's Cases on Sales. *2 hrs., both semesters* (BLAIR)
16. Suretyship and Mortgages.—Text-book: Ames's Cases on Suretyship and Wyman's Cases on Mortgages. *2 hrs., both semesters* (LEWERS)

THIRD-YEAR COURSES

17. Conflict of Laws.—Text-book: Beale's Cases on Conflict of Laws. [Omitted in 1903-04.] *2 hrs., both semesters* (CLARK)
18. Constitutional Law.—Text-book: Thayer's Cases on Constitutional Law. [Open also to well-prepared fourth-year students in History and Economics. Omitted in 1903-04.] *3 hrs., both semesters* (BURCHAM)
19. Corporations.—Text-book: Keener's Cases on Corporations. *3 hrs., both semesters* (BLAIR)
20. Equity III.—Text-book: Smith's Cases on Equity Jurisdiction, Vols. II and III. [Omitted in 1903-04.] *3 hrs., both semesters* (BURCHAM)
21. Partnership.—Text-book: Ames's Cases on Partnership. [Omitted in 1903-04, and alternating thereafter with Sales.] *2 hrs., both semesters* (BLAIR)
22. Property III.—Text-book: Gray's Cases on Property, Vols. V and VI. *3 hrs., both semesters* (ABBOTT)

SPECIAL COURSES

23. California Practice.—Text-book: California Code of Civil Procedure. *1 hr., both semesters* (———)
24. International Law.—Text-book: Snow's Cases on International Law. [See course 19 in History.] *2 hrs., both semesters* (DUNIWAY)

DRAWING

Associate Professor ARTHUR BRIDGMAN CLARK.

Assistant Professor GEORGE LOFTUS NOYES.

Assistant CHLOE LESLEY STARKS.

The Department aims to meet the needs of three classes of students: students who wish training in artistic perception and graphic expression, for its general culture value; students who wish to begin their professional art study while still receiving other University training; and technical students, to whom some drawing is essential.

1. **Elementary Drawing.**—Introductory course. The habits of visual observation and graphic expression which underlie all representative art are given such exercise as is possible in the time. To this end, boxes, vases, and other simple forms are used as models. The emphasis is placed equally on accuracy of proportion, ensemble of light and shade, and a free, natural, direct technical method. While registration for two hours is permitted, at least three hours (nine actual working hours per week) is needed as preparation for other courses in the Department. Open to all students.

2 to 5 hrs., 1st semester (STARKS)

2. **Elementary Drawing of the Head.**—Drawing the head from cast and life. Open to students with a satisfactory record in course 1.

3 to 5 hrs., 2d semester (NOYES)

3. **Advanced Drawing of the Head.**—A continuation of course 2 with more attention to light and shade values. Students will use pencil, charcoal, or oil paint as the instructor may advise. Open to second-year students.

3 to 5 hrs., either semester (NOYES)

4. **Color: Oil Painting.**—Still-life painting as an introduction to the subject. Students with sufficient skill may use oil in the landscape and head classes. Open to second-year students.

2 to 5 hrs., either semester (NOYES)

5. **Landscape.**—Chiefly outdoor work; but supplemented during the colder weather of each semester by study from drawings and photographs, with special attention to decorative composition. The pen, brush (monochrome), pencil, and char-

coal are used according to the needs of each individual. Open to students who have made a satisfactory showing in course 1.

3 to 5 hrs., either semester (CLARK)

6. Lectures.—Ideals and processes in pictorial and applied art. Open to all students.

2 hrs., 1st semester (CLARK)

7. Journal Club.—Discussion of modern and current art. Open to advanced students of the Department.

1 hr., 2d semester (CLARK)

8. Scientific Perspective.—This course deals with the mathematical principles of perspective in solving problems on the drafting-board, and with the application of the principles in drawings of actual buildings, landscape, and figures from nature. [Course 8 is given in alternate years; will be omitted in 1903-04.]

2 hrs., 2d semester (CLARK)

9. Scientific Drawing.—A course designed to assist students in natural history laboratories. It will include the drawing of simple scientific subjects in pen outline, line and stipple shading, wash, and line and wash. Especial attention will be paid to needs of individual students. Open to students completing course 1.

2 hrs., both semesters (STARKS)

Laboratory Fees

Courses 1 and 4, fifty cents; courses 2 and 3, five dollars (subject to a rebate according to number in class); course 5, seventy-five cents.

MATHEMATICS

Professors ROBERT EDGAR ALLARDICE, RUFUS LOT GREEN.

Associate Professor GEORGE ABRAM MILLER.

Assistant Professor HANS FREDERICK Blichfeldt.

The courses in this Department have been arranged to meet the wants of two classes of students: students whose major subject is Mathematics, and students who, while taking their major in some other department, desire to include some mathematics in their course. Students in engineering are provided for in the Department of Applied Mathematics.

For students whose major subject is Mathematics the follow-

ing program of work is recommended: in the first year, courses 2, 3, and 4; in the second year, courses 9 and 10; in the third year, courses 11 and 12; while the work during the fourth year and for graduate students may be selected from the remaining courses, and from the Department of Applied Mathematics. The advanced courses will, for the most part, be given once in two or once in three years, and it is hoped that the advanced students will thus have the opportunity of studying the more important branches of modern mathematics.

Students whose major subject is Mathematics are recommended to begin the study either of French or of German in their freshman year.

Students who desire to take one or more years of mathematics as a part of a liberal training are recommended to begin their work in this department with one or more of the courses 1, 2, 3, 4.

1. Trigonometry.—Elementary course, with applications involving logarithmic calculation.

2 hrs., 1st semester (MILLER)

2. Solid Geometry.—Elementary course.

2 hrs., 2d semester (MILLER)

3. Geometry.—This course includes a discussion of some of the more modern developments of Synthetic Geometry. Open to students who have credit for Plane Geometry as an entrance subject.

2 hrs., both semesters (ALLARDICE)

4. Algebra.—Fundamental laws, degree, symmetry, indeterminate coefficients, remainder theorem, factors, complex numbers, introduction to theory of equations, progressions, permutations, and combinations. Presupposes entrance credit in Elementary Algebra.

3 hrs., both semesters (GREEN)

Students making Mathematics their major subject should take courses 3 and 4 as the first year's work, and those who have not had trigonometry should take also course 1.

5. Determinants.—Elementary course. Presupposes course 4.

2 hrs., 1st semester (BLICHFELDT)

6. Non-Euclidean Geometry.—Presupposes a course in Calculus.

2 hrs., 2d semester (BLICHFELDT)

9. Introduction to the Calculus.—Limits, indeterminate forms,

series, partial fractions, differentiation, simpler methods of integration, with applications. Presupposes course 4.

2 hrs., both semesters (GREEN)

10. Co-ordinate Geometry.—An elementary course in the analytic geometry of the conic sections, including the discussion of the general equation of the second degree. Presupposes course 4.

3 hrs., both semesters (BLICHFELDT)

Courses 9 and 10 form the regular work, during the second year, for students whose major subject is Mathematics.

11. Advanced Co-ordinate Geometry.—General properties of conics, systems of conics, homogeneous coördinates, general properties of plane curves, curves of the third and fourth order. Presupposes course 10.

2 hrs., both semesters (GREEN)

12. Differential and Integral Calculus.—Lectures on the Differential and Integral Calculus, with applications to the theory of plane curves, on the lines of Williamson's treatises.

3 hrs., both semesters (ALLARDICE)

13. Advanced Calculus.—A continuation of course 12.

2 hrs., 1st semester (ALLARDICE)

14. Theory of Functions.—Elementary course. [Not given in 1903-04.]

2 hrs., 2d semester (ALLARDICE)

15. Differential Equations.—Text-book: Forsyth's Differential Equations.

3 hrs., both semesters (BLICHFELDT)

16. Definite Integrals.

2 hrs., 2d semester (ALLARDICE)

17. Invariants. *2 hrs., 1st semester*

(ALLARDICE)

18. Geometry of Three Dimensions.

2 hrs., both semesters (ALLARDICE)

19. Theory of Functions.—Extended course.

3 hrs., both semesters (ALLARDICE)

20. Theory of Equations.

3 hrs., both semesters (GREEN)

21. History of Elementary Mathematics.

2 hrs., 1st semester (MILLER)

22. Elementary Theory of Groups.

3 hrs., both semesters (MILLER)

23. Theory of Numbers.
 2 hrs., 2d semester (MILLER)
24. Seminary: Theory of Groups.
 2 hrs., both semesters (MILLER.)

APPLIED MATHEMATICS

Professor LEANDER MILLER HOSKINS.

Instructors HALCOTT CADWALADER MORENO, WILLIAM ALBERT
 MANNING.

Assistant ELMER GEORGE BRUA.

1. Algebra. *5 hrs., 1st semester* (MORENO, MANNING)
2. Solid Geometry.
 2 hrs., 1st semester (MORENO, MANNING)
3. Trigonometry. *2 hrs., 2d semester* (MORENO, MANNING)
4. Co-ordinate Geometry.
 5 hrs., 2d semester (MORENO, MANNING)

Courses 1, 2, 3, and 4 should be taken during the first year by students in Engineering.

5. Calculus. *3 hrs., both semesters* (MORENO, MANNING)

6. Theoretical Mechanics.—An elementary course, covering the fundamental principles of Statics, kinematics, and Kinetics, restricted mainly to coplanar forces and to plane motion of particles and of rigid bodies. An elementary treatment of Graphical Statics is included. The course is designed as a preparation for the courses in Applied Mechanics taken by students of Engineering, but is open to all whose preparation includes Co-ordinate Geometry. Calculus must either precede this course or be taken at the same time.

5 hrs., both semesters (HOSKINS, MORENO)

Courses 5 and 6 should be taken during the second year by students in Engineering.

7. Theoretical Mechanics.—An elementary course, designed primarily for students whose major work is in Mathematics or in Mathematical Physics, but open to others having the requi-

site preparation. A working knowledge of the elements of Differential and Integral Calculus is presupposed.

3 hrs., both semesters (HOSKINS)

8. Theoretical Mechanics.—An advanced course on the Statics and Kinetics of rigid bodies and of systems of bodies. Open to students who have completed course 6 or course 7.

3 hrs., both semesters (HOSKINS)

Courses in one or more of the following subjects will be open to students having the requisite mathematical preparation:

Theory of Attraction and of the Potential Function.

Hydromechanics.

Theory of Elasticity.

These courses must be preceded by course 8, or its equivalent.

PHYSICS

Professor FERNANDO SANFORD.

Associate Professor HERMAN DE CLERCQ STEARNS.

Assistant Professors SAMUEL JACKSON BARNETT, FREDERICK

JOHN ROGERS.

Instructor JOSEPH GRANT BROWN.

1. Dynamics.—Including hydrostatics and pneumatics. Open only to students who have had algebra and plane geometry. This course or its equivalent is required as a preparation for each of the courses following. One or two lectures and two laboratory periods per week. All students are urged to register for four hours if they can spare the time.

3 or 4 hrs., either semester (ROGERS, BROWN)

2. Electricity and Magnetism.—One lecture and two laboratory periods per week.

3 or 4 hrs., either semester (BARNETT, ROGERS)

3. Heat.—One lecture and two laboratory periods per week. Open to students who have had course 1.

3 hrs., either semester (STEARNS)

4. Sound.—Including wave-motion. Open to students who have had course 1. *2 hrs., 1st semester* (STEARNS)

5. **Elementary Optics.**—Open only to students who have had trigonometry. Only a small class can be accommodated, and the preference will be given to students who need this training for their major subject. Two laboratory periods per week.

2 hrs., either semester (SANFORD)

Courses 1, 2, 3, 4, and 5 constitute a course in general Physics, and are intended to precede the advanced courses.

6. **Heat, Sound, and Light.**—This is a special course designed for students who cannot spare the time required for courses 3, 4, and 5. One lecture and two laboratory periods per week.

3 hrs., 2d semester (STEARNS)

7. **Electricity and Magnetism.**—Open to students who are taking or have taken calculus. The course includes, in addition to the elementary theory and experiments, an extended series of electrical measurements.

3 hrs., both semesters (BARNETT)

8. **Experimental Optics.**—For major students in Physics. A few others will be admitted by special arrangement. Two laboratory periods per week.

2 hrs., both semesters (SANFORD)

9. **Electrical Measurements.**—Open to students who have taken courses 1 and 2, or their equivalent, and who have taken or are taking calculus. *3 to 5 hrs., both semesters* (BARNETT)

10. **Investigation of Original Problems in the Laboratory.**

hours to be determined in each case (SANFORD)

11. **General Physics.**—Lectures. Open to students who have had courses 1, 2, 3, 4, and 5, or their equivalent.

3 hrs., both semesters (SANFORD)

12. **Electrical Theory.**—Based largely upon the instructor's *Elements of Electromagnetic Theory*. Open to students who have taken course 2 or course 7, and calculus.

3 to 5 hrs., both semesters (BARNETT)

13. **Teachers' Course in Elementary Physics.**—Open to students who have had courses 1, 2, 3, 4, and 5, or their equivalent.

1 hr., both semesters (SANFORD)

14. **General Thermodynamics.**—Open to students who have had calculus and course 3, or its equivalent.

3 hrs., 1st semester (STEARNS)

15. Vibratory Motion.—A theoretical course consisting of recitations and lectures illustrated by occasional lecture experiments and a few carefully executed laboratory experiments. A knowledge of differential and integral calculus is required.

3 hrs., 1st semester (ROGERS)

16. The Kinetic Theory of Gases.—Open to students who have had calculus and course 3, or its equivalent.

2 hrs., 2d semester (STEARNS)

17. History of Physics.—Lectures and readings on the history of physical science with special reference to the development of theories. The first four courses in physics are required before entering this course. *2 hrs., 2d semester* (ROGERS)

18. Electrical Theory, Advanced Course.—Selected parts of the subject. Open to students who have taken course 12.

2 or 3 hrs., both semesters (BARNETT)

19. The Magnetism of Iron.—Open to students who have taken course 7. *2 hrs., 2d semester* (BARNETT)

Courses 6, 7, and 8 in Applied Mathematics are also recommended for major students in Physics.

Laboratory Fees

For courses 1, 2, 3, 6, and 7 a laboratory fee of three dollars a semester will be charged. For courses 4, 5, and 8, the fee will be two dollars. In courses 9 and 10, the fee will depend upon the number of hours credit and the apparatus used, but will not exceed five dollars per semester.

CHEMISTRY

Professors JOHN MAXSON STILLMAN, LIONEL REMOND LENOX.

Associate Professors STEWART WOODFORD YOUNG, EDWARD CURTIS FRANKLIN.

Assistant Professor ROBERT ECKLES SWAIN.

Instructor ALVIN JOSEPH COX*

Assistants FRANK L. HESS, JOHN PEARCE MITCHELL, WILLIAM HENRY SLOAN, FRANK ELMER SOHLER, ROBERT WILLIAM DODD, MILO HART EVANS, NOAH CENTENNIAL GRIDER, FLORENCE JULIA ROSS.

I. LECTURE COURSES

1. **General Inorganic Chemistry.**—Comprising a systematic treatment of elementary principles and the properties of more important elements and their compounds. In connection with laboratory course *a*, and open in connection with that course, to all students in the University.

2 hrs., both semesters (SWAIN)

2. **Advanced Inorganic Chemistry.**—Discussion of special subjects in inorganic chemistry and of the elements of chemical theories. Open to all students who have completed courses 1 and *a*, or who have passed the examination in General Chemistry, and required of all students whose major is Chemistry. [Beginning 1904-05. In 1903-04 this course will be the same as previously offered under course 2.]

3 hrs., both semesters (STILLMAN)

3. **Organic Chemistry.**—Lectures and reviews on the Chemistry of Carbon Compounds. Open to students who have completed courses 1 and *a*. [Course 3 will be given in 1903-04 by Associate Professor FRANKLIN.]

2 hrs., both semesters (YOUNG)

4. **Industrial Chemistry.**—Lectures on the processes of chemical arts and industries—fuels, acid and alkali manufacturing, glass, explosives, sugar-making and refining, petroleum, etc. Lectures in this course are also given by Professor LENOX (Iron and Steel). Open to students who have completed courses 2 and 3; or may be taken concurrently with course 3.

2 hrs., both semesters (STILLMAN)

*Absent on leave, 1902-03.

5. **History of Chemistry.**—Open to students who have completed courses 2 and 3. [This course will not be given in 1903-04.]

2 hrs., 1st semester, in alternate years (STILLMAN)

6. **Qualitative Analysis.**—In connection with laboratory course *b*. *1 hr., either semester* (LENOX)

7. **Advanced Organic Chemistry.**—Advanced topics in Organic Chemistry, including Stereo-Chemistry. Open to students who have completed course 3.

2 hrs., 1st semester, in alternate years (FRANKLIN)

8. **General Physical Chemistry.**—Lectures covering as far as possible the whole field of physical chemistry. Open to students who have completed course 2 in Chemistry, courses 3 and 4 in Mathematics (completion of course 12 in Mathematics is also urgently advised), and courses 1 and 2 in Physics.

3 hrs., both semesters (YOUNG)

9. **Physical-Chemical Measurements.**—An informal course of lectures given as needed in connection with course *f*.

(No credit) (YOUNG)

10. **Theories of Analytical Chemistry.**

1 hr., 2d semester (YOUNG)

11. **Physiological Chemistry.**—A brief survey of the field of Physiological Chemistry. Open to students who have completed courses 3 and *d*, and Physiology 1.

2 hrs., both semesters (SWAIN)

12. **Seminary in Chemistry.**—Discussion of assigned topics in theoretical and general chemistry. Open to graduate students, and to advanced undergraduates in Chemistry, with the approval of the Faculty in Chemistry.

1 hr., both semesters

II. LABORATORY COURSES

a. **General Inorganic Chemistry.**—First semester: Illustrating fundamental laws and principles of elementary chemistry. Second semester: Inorganic preparations and general chemistry. Students with entrance credit in chemistry may be excused from the first semester's laboratory work. In connection with course 1. *3 afternoons, both semesters*

(SWAIN, DODD, GRIDER, EVANS, ROSS)

b. Qualitative Analysis.—Open to students who have completed courses 1 and *a*, or who have passed the examination in Elementary Chemistry.

3 afternoons, either semester (LENOX, MITCHELL)

c. Preparation of Typical Carbon Compounds.—Open in connection with course 3 to students who have completed course *b*.

3 afternoons, either semester (YOUNG, FRANKLIN)

d. Quantitative Analysis.—Training in manipulation in gravimetric and volumetric methods. Work begins either semester. Students in other departments than Chemistry may register for three afternoons if they cannot arrange for four, as is recommended. Open to students who have completed courses 6 and *b*. *4 afternoons, either semester* (STILLMAN, SLOAN)

e. Mineral Analysis.—Systematic analysis of representative minerals. Open to students who have completed course *c*, and required of students whose major subject is Chemistry.

4 afternoons, either semester

(STILLMAN, LENOX, SLOAN)

f. Physical-Chemical Measurements.—Exercises in the practice of physical-chemical laboratory methods. Open to students who have completed or are taking course 8, and who have completed course *d*.

3 or 5 hrs., either semester (YOUNG)

g. Physical-Chemical Research.—Special problems for original investigation in the field of Physical Chemistry. Open to students who have completed course *f*.

hours to be arranged (YOUNG)

h. Physiological Chemistry.—A laboratory course embracing a study of the various tissues and fluids of the body and of the chemistry of digestion and excretion. Requirements as under lecture course 11.

3 hrs., both semesters (SWAIN)

i. Urine Analysis.—Open to students who have completed course *d*. [Not given in 1903-04.]

3 or 4 afternoons, either semester (SWAIN)

j. Special Methods in Mineral Analysis.—Chiefly volumetric, including iron and steel analysis. Open to students who have completed course *d*. *4 afternoons, 2d semester* (LENOX)

k. Special Problems for Original Investigation in the Field of Organic Chemistry.

3 or more hrs., either semester (FRANKLIN)

l. Sugar Analysis.—Methods of analysis used in sugar manufacture and refining. Open to students who have completed course *e*. *3 or four afternoons, 1st semester* (STILLMAN)

m. Organic Analysis.—Open to students who have completed courses *d* and *e*. *2 afternoons, either semester* (FRANKLIN)

n. Assaying.—Open to students who have completed course *d*. *3 afternoons, either semester* (LENOX, HESS)

o. Sanitary Water Analysis.—Open to students who have completed course *d*.

3 afternoons, 2d semester (STILLMAN)

Candidates for the degree of Bachelor of Arts in Chemistry will be required to complete courses 1, 2, 3, 6, *a*, *b*, *c*, *d*, and *e* or *f* in Chemistry, course 1 in Physics, courses 1 and 2*a* in German. But candidates who are looking forward to Medicine or Pharmacy as a career, are permitted to substitute Physiology 1 for Physics 1 when it is not practicable for them to take both, and to substitute Physiological Chemistry or Urine Analysis for *e* or *f*.

III. CHEMICAL ENGINEERING

In recognition of an increasing field of activity for men qualified to occupy positions as superintendents and managers of manufacturing enterprises involving chemical processes, it has been arranged, in co-operation with the departments of Civil Engineering and Mechanical Engineering, to offer students the opportunity to obtain such training as will best qualify them for such positions. Experience shows the great advantage in these positions of fundamental training in principles of construction, strength of materials, steam engineering, machine designing, combined with thorough chemical training.

The degree of Engineer in Chemical Engineering will be conferred upon completion of the following courses: Chemistry, 1, *a*, 2, 3, 4, 6, *b*, *c*, *d*, *e*, *f*; German, 1, 2; Physics, 1, 2; Applied Mathematics, 1, 2, 3, 5, 6; Engineering, 1, 2, 3*a*; Mechanical Engineering, 2, 3, 4, 5, 7, 8; thesis work.

It is estimated that students entering the University with that intention will be able to take the degree in one year after the baccalaureate degree. Students pursuing this course will be given the degree of Bachelor of Arts in Chemistry at the end of four years.

Laboratory Fees

A charge of twenty-five dollars per semester will be made to students in each laboratory course. Of this charge five dollars per semester in assaying, and ten dollars per semester in the other courses, is returnable, less bills for breakage and loss of apparatus.

GENERAL BOTANY

Professor DOUGLAS HOUGHTON CAMPBELL.

Associate Professor GEORGE JAMES PEIRCE.

Instructor ANSTRUTHER ABERCROMBIE LAWSON.

1. **Elementary Botany.**—Study of representatives of the principal groups of plants with lectures upon special morphology and classification. (Campbell's University Text-book of Botany.) The aim of this course is to give the student a grounding in the principles of plant structure and classification, derived from a careful study in the laboratory of selected types, supplemented by such explanatory lectures as may be deemed necessary.

3 hrs., both semesters

(CAMPBELL, PEIRCE, LAWSON)

2. **Algæ.**—Lectures, reading, and laboratory work upon the special morphology and classification of the Algæ.

5 hrs., 1st semester

(CAMPBELL)

3. **Archegoniataæ.**—Special morphology and classification of the Archegoniataæ. Continuation of course 2.

5 hrs., 2d semester

(CAMPBELL)

4. **Physiology.**—Laboratory work, lectures, and reading on Respiration and Nutrition. [At least an elementary knowledge of Physics and Chemistry is a desirable preliminary to this course.]

3 hrs., 1st semester

(PEIRCE)

5. **Elementary Bacteriology.**—Laboratory work, lectures, and reading.

3 hrs., 1st semester

(PEIRCE)

6. **The General Physiology of Plants.**—Lectures. Open to all except first-year students. [This course was not given in 1902-03, but is announced for 1903-04.]

1 hr., 1st semester (PEIRCE)

7. **The Evolution of Plant Forms.**—Lectures. Open to all except first-year students. [This course was not given in 1902-03, but is announced for 1903-04.]

1 hr., 2d semester (CAMPBELL)

8. **Physiological Anatomy.**—Laboratory work and lectures on the cells and tissues, especially of vascular plants.

3 hrs., 2d semester (PEIRCE)

[Course 8 is desirable, but is not required as a preliminary to course 4 (see above).]

9. **Physiology.**—Laboratory work, lectures, and reading on Growth, Irritability, and Reproduction. [At least an elementary knowledge of Physics and Chemistry is a desirable preliminary to this course.]

3 hrs., 2d semester (PEIRCE)

10. **Histology.**—Lectures and laboratory work on the structure and development of the vegetative tissues. Microtechnique.

3 hrs., 1st semester (LAWSON)

11. **Cytology.**—Lectures and laboratory work on the cell and cell organs.

3 hrs., 2d semester (LAWSON)

12. **Advanced Work in Morphology and Physiology.**—Intended especially for graduate students. (CAMPBELL, PEIRCE)

Course 1 must precede all other courses, except courses 6 and 7. Students making the subject a major must complete thirty-five hours including courses 1 to 4, course 2 or 3 in Systematic Botany, and also course 1 in Zoology, before graduation. Course 12 is intended especially for graduate students, and opportunities will be given such students for carrying on special lines of work upon original problems.

Laboratory Fees

Ten dollars for course 5; five dollars for courses 4 and 9; three dollars per semester for each of the other laboratory courses.

SYSTEMATIC BOTANY

Professor WILLIAM RUSSELL DUDLEY.

Instructor LE ROY ABRAMS.

Assistant P. HJALMAR OLSSON-SEFFER.

Herbarium Assistant ADOLPH DANIEL EDWARD ELMER.

Instruction in this Department chiefly relates to the Spermaphytes, their structure, affinities, and geographic distribution. The advanced work on the Fungi will also be given under its direction.

Course 1, or its equivalent, and the Algæ and Archegoniata in General Botany, course 1 in Zoology, course 1 in Entomology, and course 1 in Geology are required of students intending to graduate with Systematic Botany as a major study. Course 1 is also required as a basis for courses 2, 4 and 6. An elementary knowledge of the structure of the flowering plants only is required to enter courses 3 and 5. Students are strongly advised to take Physiological Anatomy and one course in Physiology by Professor PEIRCE.

[1. **Elementary Botany.**—A study of plant types, etc. This is course 1 under General Botany.]

2. **Fungi.**—The laboratory work (three hours) will be devoted to morphology, development, and culture methods; the lectures to systematic relationships, with an account of economically important forms.

5 hrs., 1st semester (DUDLEY, ABRAMS)

3. **Spermaphyta.**—The morphology, histology, and affinities of the principal orders of flowering plants represented on the Pacific Slope will be studied, and an acquaintance made with typical forms through dissection and drawing.

4 hrs., 2d semester (DUDLEY, ABRAMS)

[4. **The Algæ and Archegoniata.**—Courses 2 and 3 under General Botany.]

5. **Geographical Distribution and Forest Botany.**—Lectures on the orders containing trees and shrubs and on the general principles of geographical distribution which they illustrate. Laboratory work, also preparation of herbarium specimens of woody plants, native and exotic.

3 hrs., 2d semester (DUDLEY, ABRAMS)

6. **The Compositæ.**—A study of representatives of the tribes of Compositæ, with reference to the general principles of classification. *2 or more hrs., 1st semester* (DUDLEY, ABRAMS)

7. **Advanced Work.**—Advanced or special study, chiefly for seniors in the Department. It is planned to meet the needs of each individual, and to promote habits of independent work.

3 or more hrs., each semester (DUDLEY)

8. **Graduate Work.**—This includes investigation on a special subject in the Spermaphyta or Fungi, which may be either a systematic or a biological study. It is supplemented by reading, and a study of methods in bibliography.

Several carefully planned excursions in the second semester, through the zones of trees and chaparral in the adjacent mountains, are made the subjects of written reports by the students.

The Department has begun a series of observations and records designed to correlate the facts of plant distribution with those of the extraordinary variation in temperature, rainfall, and soil in the Santa Cruz mountain peninsula. The almost complete isolation of this tract by water and broad treeless valleys, and its range of elevation from sea level to 3800 feet (Loma Prieta), give additional value to it as a region for ecological studies relative to the development and preservation of the remarkable Coast Range flora.

The Herbarium consists of about 16,000 mounted sheets, largely of plants collected in Western America, and includes, besides purchases, considerable donations from the National Herbarium, the California Academy of Sciences, J. W. Congdon of Mariposa, and others. Gifts of herbarium specimens of trees and shrubs are especially desired, and will be named for collectors. The considerable private collections of flowering plants and fungi belonging to the head of the Department are in constant use.

Laboratory Fees

Laboratory fees for courses 5 and 6, two dollars; for the other courses, three dollars.

PHYSIOLOGY AND HISTOLOGY

Professor OLIVER PEEBLES JENKINS.

Associate Professor FRANK MACE MCFARLAND.*

Assistant Professor RAY LYMAN WILBUR.

Instructors CLARA S. STOLTENBERG, NEWTON CLEAVELAND.

Assistants ANTON JULIUS CARLSON, JOHN FRANCIS COWAN.

UNDERGRADUATE COURSES

1. **General Anatomy and Physiology.**—This course is designed to give a general view of the laws of the structure and the activity of organisms. The work will give occasion to discuss many questions of General Biology. It consists of: first, the study of the cell and its activities as shown in the unicellular organisms, in reproductive cells, and in individual cells of many tissues; second, the study of the laws and course of development resulting in higher differentiations in structure, and specializations in function, exhibited in a selected series of organisms, both animals and plants, of increasing complexity; third, the comparative study of the physiological processes of forms placed under widely different conditions. The latter part of the course is occupied with an introduction to the embryology, anatomy, and physiology of vertebrates. (One lecture and six laboratory hours a week.)

3 hrs., both semesters

(JENKINS, STOLTENBERG, COWAN)

2. **Physiology of Muscle, Blood, and Circulation.**—To be preceded by course 1. An experimental course covering the ground represented in Foster's Physiology, Part I, or the American Text-book on the same subjects. (One lecture and five laboratory hours per week.)

3 hrs., 1st semester

(WILBUR, COWAN)

3. **Physiology of Digestion, Respiration, Elimination of Wastes, Metabolism, and Nutrition.**—Planned to follow course 2. An experimental course, with Foster's Physiology, Part II, and the American Text-book, as texts. (One lecture and five laboratory hours per week.)

3 hrs., 2d semester

(WILBUR, COWAN)

*Absent on leave, 1902-03.

4. Structure of the Nervous System.—The course consists of the dissection and comparative study of a series of vertebrate brains, including the human brain and cord, also the peripheral nervous system; abundant material is provided, also such necessary helps as the latest models and charts. For texts the student will use Quain, Edinger, and Barker. (One lecture and five laboratory hours per week.)

3 hrs., 1st semester (STOLTENBERG, CARLSON)

4b. Structure of the Nervous System.—Advanced course. Open to those who have taken courses 4 and 5.

2 hrs., 2d semester (STOLTENBERG)

5. Histology of the Nervous System and Sense Organs.—The course includes also the anatomy of the sense organs. It is planned to accompany course 4, the two being designed to give the gross and minute anatomy of the central and peripheral nervous system and sense organs. The texts necessary for the student's use are Quain and Barker. (One lecture and five laboratory hours per week.)

3 hrs., 1st semester (STOLTENBERG, CARLSON)

6. Physiology of the Nervous System and Sense Organs.—An experimental course in these subjects, designed to follow courses 4 and 5. Texts: Foster, American Text-book. (One lecture and five laboratory hours per week.)

3 hrs., 2d semester (JENKINS, CARLSON)

7. Structure and Physiology of the Blood.—Advanced courses open only to those who have completed courses 1, 2, 3, 4, 5, and 6. They consist of laboratory work with occasional lectures. *a* and *b* may be taken independently.

a. Structure and Composition of the Blood.

3 hrs., 1st semester (WILBUR)

b. Physiology of the Circulation.

3 hrs., 2d semester (WILBUR)

8. Special Courses in Physiology.—Advanced courses open only to those who have had courses 1, 2, 3, 4, 5, and 6. They are arranged for the advanced study of selected subjects in physiology, or as a drill in the methods of research. The work will be planned for the individual student, the time varying with the exigencies of the case.

2 to 5 hrs., both semesters (JENKINS)

9. Histology.—This course includes both the study of the tissues in a comparative way, and the history of their development; also the minute anatomy of organs, except those of the nervous system and senses. [See courses 4 and 5.] It also gives a drill in histological technique. Open to those who have taken course 1, or its equivalent. Students with Physiology as their major are advised to take courses 2, 3, and 9 together. (One lecture and six laboratory hours a week.)

3 hrs., both semesters (CLEAVELAND, CARLSON)

10. Histogenesis.—A course in advanced Histology for students who have completed courses 1 and 9, and in addition the first semester of Vertebrate Embryology (Zoology 6). It comprises the comparative study of the histogenesis of the fundamental vertebrate tissues and organs. (One lecture per week, minimum laboratory work six hours per week)

3 hrs., 1st semester (CLEAVELAND)

11. Neurocytology.—A comparative study of the minute structure of the nerve cell and nerve fibre, the neurone theory, and the question of functional alterations of structure during normal activity and artificial stimulation. (One lecture and at least six laboratory hours per week.) Open to advanced students. [Not given in 1902-03.]

3 to 5 hrs., 2d semester (MCFARLAND)

12. Cellular Biology.—A course in Cytology dealing with the structure and functions of the cell, with especial reference to the reproductive processes in unicellular and multicellular organisms, and the theories connected therewith. Open to advanced students. (Two lectures per week, with demonstrations and laboratory work.) [Not given in 1902-03.]

2 hrs., 2d semester (MCFARLAND)

13. Anatomy.—This course consists of twelve weeks' study of human osteology, with a brief comparative study of skeletons of vertebrates. The remaining six weeks is given to mammalian myology, angeology, and splanchnology (dog, cat, rabbit.) [For anatomy of nervous system and sense organs, see courses 4 and 5.]

3 to 5 hrs., 2d semester (WILBUR)

14. Special Courses in Histology.—Advanced courses in Histology will be arranged for individual students, with a view

to giving drill in methods of research. Open only to those who have had courses 1, 5, and 9.

2 to 5 hrs., both semesters (CLEVELAND)

15. **Journal Club.**—Students in the advanced classes will be expected to meet once a week to discuss current literature in Physiology and Histology. *1 hr., both semesters*

16. **Seminary in Physiology and Histology.**—Open to graduate students. *2 hrs., both semesters*

17. **Research in Physiology or Histology.**

hours to be determined, both semesters

(JENKINS, McFARLAND)

Candidates for the Bachelor's degree who select Physiology and Histology as a major, will be expected to take courses 1, 2, 3, 4, 5, 6, 9, and 15, and at least five hours to be made up from the other courses offered; and in addition courses 1 and 2 in Chemistry, 1 and 2 in Physics, and the first semester in Embryology (course 6 in Zoology).

Laboratory unit of credit.—In those courses in which definite laboratory time is not fixed, three hours of laboratory work are taken as the equivalent of one hour's credit.

Laboratory Fees

Seven dollars per semester, except for course 1, in which the fee is five dollars per semester.

GRADUATE COURSES

The graduate work of the Department is included in the courses numbered 4b, 7, 8, 10, 11, 12, 14, 15, 16, and 17. Undergraduate students may elect such of these courses as they are prepared to take, but credit recorded in undergraduate standing will not count toward a higher degree. The details of the work of a graduate student will be planned for each individual, and will naturally depend on the aim sought by him and upon his previous training. Candidates for the higher degrees will be expected to include in their work attendance on the Journal Club and Seminary, the selection of certain of the courses given above, and the accomplishment of some research. When it is desired to select a minor subject the choice of such minor will be guided by the needs of the candidate. The work leading to these degrees is of such a nature as to require a

reading knowledge of German and French for its accomplishment.

PREPARATION FOR THE STUDY OF MEDICINE

Students intending to enter on the study of medicine, are advised to take Physiology and Histology as a major subject, with Chemistry, Physics, Comparative Anatomy of the Vertebrates, and Hygiene among the collateral subjects. Such a course gives that foundation both in scientific knowledge and in skill in experimental Physiology, and in Histological and Anatomical technique, which will make it possible to accomplish the medical course of the best medical schools in a shorter time and with greater advantage.

HYGIENE

Assistant Professors WILLIAM FREEMAN SNOW, THOMAS ANDREW STOREY.

Instructors STELLA ROSE, FLORENCE BOLTON, HALBERT WILLIAM CHAPPEL.

Assistants EDITH H. MATZKE, VERA TOWNSEND, ROYCE REED LONG, ALICE LOVEJOY DICKINSON, CHARLES WILBUR THOMAS, JR., GRAHAM HUGHES BEEBE, HOMER MARTIN, HELEN KATE NORTH, KATHRYN ROMER KIP.

Courses are offered in physical training, and an advisory control is exercised over student health affairs and athletics.

Every student upon entering the University is required to report to the assistant professor of hygiene for a brief medical examination of his eyesight and general health. Any condition which may place a limitation on the amount or kind of work planned by the student is discussed with him or made the subject of a report to his major professor or to the Committee on Registration.

Students intending to train for any of the athletic teams, or to register for gymnasium work, are required to pass a careful physical and medical examination at the beginning of each semester.

All students are entitled to medical consultation and to individual advice in other matters directly or indirectly relating to their health, at any time during the year; but no treatment is undertaken by the University.

Provision for the care of cases of contagious disease or of other serious illness is made by THE GUILD, which is under the supervision of a committee composed of students and members of the faculty. Hospital and nursing service will be provided by means of a central hospital and a number of portable hospital equipments. The Guild fee of one dollar per semester will probably be required of all students.

1. **Physical Training.**—Systematic work in the gymnasium, designed to give each student a well developed, thoroughly coördinated body. Three exercise hours a week.

1 hr., both semesters (CHAPPEL, ROSE, DICKINSON)

2. **Special Gymnastic Training.**—Open by special permission to those registered for course 1 who desire training in the principles and practice of gymnastic teaching. Each student in this course will be in charge of the apparatus instruction of a section in course 1. The equivalent of three hours a week.

1 hr., both semesters

(STOREY, CHAPPEL, ROSE, DICKINSON)

The work of these courses is carried on by the instructors, in Roble Gymnasium for women, and in Encina Gymnasium for men. Athletic facilities are afforded in connection with each gymnasium.

Gymnasium Fees

Encina Gymnasium, two dollars per semester; Roble Gymnasium, one dollar per semester.

ZOOLOGY

Professor CHARLES HENRY GILBERT.

Associate Professors GEORGE CLINTON PRICE, HAROLD HEATH.

Assistant Professor JOHN OTTERBEIN SNYDER.

Curator EDWIN CHAPIN STARKS.

1. **Elementary Zoology.**—A laboratory course involving the study of representatives of the principal groups of animals, together with lectures on their structure and classification, and on the general laws of biology which they illustrate.

3 hrs., both semesters (HEATH)

2. **The Invertebrates.**—This course, following the first year's

work, is designed to give the student a broader knowledge of the morphology and relationships of the more important invertebrate groups. The main features of development, including the morphology of larval forms, will receive attention.

3 hrs., both semesters (HEATH)

3. **Advanced Work on Invertebrates.**—The original investigation of problems connected with the anatomy, embryology, or classification of invertebrates.

2 to 5 hrs., both semesters (HEATH)

4. **The Vertebrates.**—A general course in the classification of vertebrate animals, with studies in the habits and the geographical distribution of species. The course will include field excursions and a study of the methods of collecting and preserving specimens. *2 hrs., both semesters*

(GILBERT, SNYDER)

5. **Comparative Anatomy of the Vertebrates.**—A more detailed examination of vertebrate morphology, including dissection of representatives of the several classes of vertebrates, with comparative studies in vertebrate osteology, the nervous and circulatory systems, etc.

3 hrs., both semesters (PRICE)

6. **Vertebrate Embryology.**—During the first semester, the development of the chick; for the second semester, the shark, salamander, and mammal.

3 hrs., both semesters (PRICE)

7. **Advanced Embryology.**—The work during the first semester will consist of a detailed study of the development of the nervous system, the urinogenital, or some other important system of organs. During the second semester, each student will be given some special problem, usually in the line of the verification of some piece of original work. [Not to be given in 1903-04.] *2 hrs., both semesters* (PRICE)

8. **Ichthyology.**—A course of lectures and laboratory work, including an examination of the larger groups of fishes, with special reference to the characters on which they are based, and including practical work in the discrimination of species.

2 to 5 hrs., both semesters (GILBERT)

9. **Advanced Ichthyology.**—Special problems in the morphol-

ogy and classification of fishes will be set for advanced students prepared for such work.

2 to 5 hrs., both semesters (GILBERT)

10. **Journal Club.**—Open to seniors and graduate students.

2 hrs., both semesters (GILBERT)

Course 1, or its equivalent, must precede all laboratory courses. Major students must obtain before graduation at least forty hours' credit in biological subjects, selected from courses 1 to 10 in Zoology, course 2 in Physiology, course 1 in Botany, and course 1 in Entomology.

Work for graduate and special students will be laid out in accordance with their individual needs and preferences.

THE ZOOLOGICAL COLLECTIONS

The *Zoological Museum* contains a very full representation of the fishes of North America, and includes among others a valuable series of the deep-water fishes of the Pacific, and large collections from the West Indies, the Hawaiian Islands, Bering Sea, Japan, the coasts of Mexico and Central America, and the Galapagos Islands. The museum contains also a large representation of the reptiles, batrachians, birds, and mammals of California and adjoining States. The development of the museum has been due very largely to the co-operation of Mr. Timothy Hopkins.

Material illustrating the principal groups of invertebrates is ample for class instruction.

Laboratory Fees

Course 1, five dollars per semester; all other laboratory courses, three dollars each per semester.

ENTOMOLOGY

Professor VERNON LYMAN KELLOGG.

Instructor ROBERT EVANS SNODGRASS.*

Assistant RUBY GREEN BELL.

1. **Elementary Entomology.**—The elementary study of insect structure, metamorphosis, habits and classification, including practice in collecting and preserving specimens.

3 hrs., either semester (KELLOGG, BELL)

*Beginning August, 1903.

2. **Morphology and Development of Insects.**—Continuation of the preceding course, including the study of the comparative morphology of adult and larval forms.

3 hrs., either semester (KELLOGG, BELL)

3. **Insect Ecology and Economic Entomology.**—The ecologic relations of insects, with special attention to the scale insects (Coccidæ) and others of economic importance in California. Must be preceded by courses 1 and 2.

2 or 3 hrs., both semesters (KELLOGG)

4. **General Entomology.**—A course of lectures and demonstrations. Open to students who have had a year's laboratory course in Biology (Zoology, Botany, or Physiology).

2 hrs., 2d semester (KELLOGG)

5. **Advanced Work.**—Advanced study and investigation of the biology of insects. Laboratory and field work.

2 to 5 hrs., both semesters (KELLOGG)

Work for graduate and special students will be specially arranged.

Major students in Entomology must obtain before graduation twenty-four hours' credit in Entomology, and credit for course 1 in Zoology, course 1 in General Botany, and course 3 in Systematic Botany, making forty hours in biological subjects. Course 1 in Zoology, or its equivalent, should precede any course in Entomology.

The *Entomological Collections* contain authoritatively determined specimens, accessible for comparison, in all of the insect orders, and include many sets of specimens illustrating the development and habits of insects. There is included, also, the most important existing collection of North American Mallophaga, comprising the types of four-fifths of all the species so far described from North America and the Pacific Islands, an unusually large collection of Coccidæ (scale insects), and a valuable series of specimens from the Galapagos Islands.

Laboratory Fees

Three dollars per semester for each laboratory course.

BIONOMICS

Instructor EDWARD BINGHAM COPELAND.

Lecturers DAVID STARR JORDAN, VERNON LYMAN KELLOGG.

1. **Organic Evolution.**—Lectures on the laws or principles of biology and the factors in organic evolution. Assigned reading. Not open to first-year students.

2 hrs., both semesters (JORDAN, KELLOGG, COPELAND)

GEOLOGY AND MINING

Professors JOHN CASPER BRANNER, JAMES PERRIN SMITH.

Associate Professor JOHN FLESHER NEWSOM.

Instructor DORSEY ALFRED LYON.

Assistant WILLIAM ALFRED WILLIAMS.

Students intending to make Geology and Mining their major subject should offer, as a part of their entrance preparation, solid geometry, trigonometry, advanced algebra (*a*), chemistry, zoology, and French or German, or both; otherwise the mathematics and chemistry must be taken in the University.

The following is a summary of the courses that lead to the degree of Bachelor of Arts in Geology and Mining:

First Year

Applied Mathematics 4 (5 hrs.); Chemistry 1, *a* (7 hrs.); Engineering 1*a*, 1*b* (6 hrs.); Physics 1, 2 (6 hrs.). Total, 24 hrs.

Second Year

Applied Mathematics 5, 6 (16 hrs.); Chemistry 6, *b*, *d* (7 hrs.); Civil Engineering 4*b* (2 hrs.); Mechanical Engineering 2 (2 hrs.); Geology and Mining 5*a*, *b* (4 hrs.). Total, 31 hrs.

Third Year

Engineering 2, 3*a* (8 hrs.); Civil Engineering 8*c* (3 hrs.); Mechanical Engineering 7, 9 (5 hrs.); Geology and Mining 1, 2, 3*, 4*, 9, 11*a*, 11*b* (14 hrs.); Chemistry *e* (3 hrs.). Total, 33 hrs.

*Geology and Mining 3 and 4 (Topographic and Field Geology) must be taken during the summer vacation.

Fourth Year

Geology and Mining 6, 7 10a, 10b (21 hrs.); Mechanical Engineering 4, 5 (8 hrs.); Engineering 3b (3 hrs.). Total, 32 hrs.

1. **Dynamic and Structural Geology.**—Lectures, with syllabus.
3 hrs., 1st semester (BRANNER)
- 1a. **Physiography.**—Lectures, with syllabus.
1 hr., 2d semester (BRANNER)
2. **Economic Geology.**—Lectures, with syllabus. Open to students who have completed course 1.
2 hrs., 2d semester (NEWSOM)
3. **Topographic Geology.**—Field and laboratory work, with the construction of geologic maps, models, and sections. Open to students who have completed course 1 in Geology, and course 4b in Civil Engineering.
4 hrs., summer vacation (NEWSOM)
4. **Field Geology.**—Field practice in working out geology in the field and its representation upon topographic maps and sections. Prerequisites: Geology 1 and Civil Engineering 4b.
1 to 5 hrs., summer vacation (BRANNER, NEWSOM)
5. **Mineralogy.**—a. Elementary Crystallography and Physical Mineralogy (first semester). b. Blowpipe Analysis (second semester). Open to students who have had elementary chemistry.
2 hrs., both semesters (J. P. SMITH, WILLIAMS)
6. **Advanced Mineralogy and Petrography.**—a. Mathematical, Physical, and Chemical Crystallography (first semester). b. Descriptive Mineralogy and Petrography, with special studies of the rock-forming minerals (second semester). Open to advanced students and graduates.
3 to 4 hrs., 1st semester; 4 hrs., 2d semester (J. P. SMITH)
7. **Paleontology.**—a. Systematic Paleontology, or the history and character of organisms (first semester). b. Historical Geology, or the history and character of geologic formations (second semester). Open to students who have completed course 1. 2 to 4 hrs., 1st semester; 4 hrs., 2d semester (J. P. SMITH)

8. Paleontology.—Original investigations of various problems in paleontology, especially of the distribution of faunas. This course will consist entirely of private work, in field and laboratory. Open to advanced students and graduates.

2 to 5 hrs., both semesters (J. P. SMITH)

[9. Assaying.—Open to students who have completed course *e* in Chemistry and courses 1 and 2 in Geology. This course is the same as course *n* in the Department of Chemistry.]

3 afternoons, either semester (LENOX, HESS)

10. Mining.—*a.* Lectures on mining operations and methods, including prospecting, development, methods of working, timbering, shaft sinking, and hoisting.

5 hrs., 1st semester (NEWSOM)

b. Continuation of *a*, including drainage, ventilation, and ore-dressing.

3 hrs., 2d semester (NEWSOM)

11a. General Metallurgy.—A study of fuels, furnaces, refractory materials, and metallurgical operations. Lectures, reading, and laboratory work. Open to students who have completed first-year Chemistry.

3 hrs., 1st semester (LYON)

11b. Metallurgy of the Precious Metals, and of the Principal Base Metals, exclusive of Iron.—Lectures, reading, and excursions. Open to students who have completed course 11a.

3 hrs., 2d semester (LYON)

11c. Metallurgy of Iron, Steel, and the Alloys.—A study of their manufacture and physical properties, with reference to their selection as constructive materials. Lectures, reading, and laboratory work.

2 or 3 hrs., either semester (LYON)

11d. Metallurgical Laboratory.—Advanced work in the physics of the metals, metallography, etc.

2 to 5 hrs., either semester (LYON)

12. Mineralogy.—Original Investigations in Mineralogy and Petrography. This course consists entirely of private work in field and laboratory. Open only to advanced students and graduates.

2 to 5 hrs., both semesters (J. P. SMITH)

13. Paleontology.—Lectures on special topics. Open to advanced students and graduates.

1 hr., 1st semester (J. P. SMITH)

14. **Special Courses.**—Special courses of instruction and training are laid out for advanced and special students according to the needs and qualifications of each individual. Special investigations are taken up by advanced students as rapidly as it is possible for them to undertake such work advantageously.

1 to 5 hrs., both semesters (BRANNER, NEWSOM)

[Courses in mine timbering, mine surveying, the designing of mining machinery, and in mineral analysis are also given; see Departments of Civil Engineering, Mechanical Engineering, and Chemistry.]

Laboratory Fees

Five dollars for the second semester in course 5.

ENGINEERING

A. ENTRANCE SUBJECTS

Students intending to take their major in one of the Engineering Departments are advised, though not required, to present, among their entrance subjects, advanced algebra, solid geometry, trigonometry, physics, drawing, and German or French. Special students should have completed entrance English, elementary algebra, and plane geometry. (See pp. 34-56).

B. GENERAL COURSES

I. Applied Mathematics

First-Year Courses:

Algebra; Solid Geometry; Trigonometry; Co-ordinate Geometry.

Second-Year Courses:

Calculus; Theoretical Mechanics.

[See announcement of Department of Applied Mathematics, p. 119.]

II. General Technical Courses

1a. **Linear Drawing and Lettering.**—(Drafting two afternoons a week, September and October.) Open to all students, and required of students in Engineering. The instruments and materials for this course cost from twenty to thirty dollars.

1 hr., either semester (FISH, HALL, HUNTER)

1b. Descriptive Geometry.—Including applications to shades, shadows, and perspective. (Two afternoons of drafting per week, November and December. Two lectures and two afternoons of drafting each week, January to May.) This course is open to students who have completed or are taking solid geometry and Engineering 1a, and is required of students in Engineering.

1 hr., 1st semester; ½ hrs., 2d semester

(FISH, HALL, HUNTER)

2. Applied Mechanics.

a. Mechanics of Materials.—Under this head are treated the theory of the strength and elastic properties of the ordinary materials of engineering construction. The main subjects covered are simple tension, compression, and shear; theory of flexure, with applications to simple and continuous beams; theory of long columns; torsion and shafts; repeated stress; sudden stress and resilience. (Lectures and recitations three hours a week.)

b. Testing of Materials.—Each student is required to make a series of experiments, testing the strength and elastic properties of wrought iron, cast iron, steel, and timber. A careful record of all experiments is required of every student. (Laboratory work, six hours a week.) Open to students who have taken course 6 in Applied Mathematics; required of all students in Engineering.

5 hrs., 1st semester

(WING)

3. Hydraulics.

a. Hydrostatics and Hydraulics.—This course treats of fluid pressure, the principles of fluid equilibrium, and the laws governing the flow of water through orifices, over weirs, in closed conduits, and in open channels. Open to students who have completed courses 5 and 6 in Applied Mathematics.

3 hrs., 2d semester

(HOSKINS)

b. Hydraulic Motors.—A discussion of the theory of the main types of turbines, including centrifugal pumps. A few lectures on the general theory of energy and on relative motion are given as an introduction to the course. Open to students who have completed course 3a.

3 hrs., 1st semester

(HOSKINS)

I. CIVIL ENGINEERING

Professors CHARLES DAVID MARX, CHARLES BENJAMIN WING,
LEANDER MILLER HOSKINS.

Associate Professor JOHN CHARLES LOUNSBURY FISH.

Assistants JOHN FLETCHER BYXBEE, JR., JOHN HARRISON FOSS,
HUBERT HARRY HALL, THOMAS BENTON HUNTER, JR., EARLE
TALBOT.

A. Topographic and Geodetic Engineering

4a. **Elementary Surveying.**—Instruments; methods of surveying; topographical mapping and sketching. (Recitations two hours, drafting and field work nine hours, each week.) Open to students who have completed Engineering 1a and Applied Mathematics, 1, 2, 3, and 4. Required of students in Civil Engineering.
5 hrs., 1st semester

(FISH, BYXBEE, TALBOT)

4b. **Elementary Surveying.**—Course 4a abridged for students in Mechanical, Electrical, and Mining Engineering. (Field work, reading, and drafting, six hours each week.)

2 hrs., either semester (FISH, FOSS)

B. Railroad Engineering

6a. **Railroad Surveying.**—Including the transition curve and earthwork. (Recitations two hours, drafting and field work nine hours each week.) Open to students who have completed 4a. Required of students in Civil Engineering.

5 hrs., 2d semester (FISH, BYXBEE)

6b. **Railroad Location.**—(One recitation a week.) Open to students who have completed 6a.

2 hrs., 1st semester (FISH)

6c. **Railroad Construction.**—(Drafting-room, two afternoons a week.) Open to students who have completed 6a, and have taken or are taking 8b.

2 hrs., 2d semester (FISH)

C. Structural Engineering

8a. **Elements of Design.**

1. *Materials.*—(See course 3, Mechanical Engineering.)

2. *Mechanics of Structures.*—Course 6 in Applied Mathematics is extended to the determination of stresses in simple trusses, both graphically and analytically. (Drafting-room, nine hours a week first half of semester.)

3. Theory of Structural Details.—Course 2 is extended to an investigation of the distribution of stresses in structural details. (Drafting (if necessary) nine hours a week last half of semester.)

Open to students who have taken course 1 in Engineering, and who have taken or are taking course 2 in Engineering, and also course 3 in Mechanical Engineering. Required of all students in Civil Engineering.

3 hrs., 1st semester

(WING)

8b. Elements of Design.

1. Materials.—Structural materials, other than metals, are studied from an engineering standpoint. Wood, stone, brick, limes, cements, etc., are considered in order. (Lectures two hours a week last half of semester.)

2. Foundations.—Under this head are considered the bearing power of soils, strength of piles, distribution of pressures, and similar details connected with the design of simple foundations. (Lectures two hours a week last half of semester.)

3. Design.—Complete designs are made, including working drawings, bills of material, and estimates of cost, of simple structures, such as a mill building and a highway bridge. (Drafting-room, nine hours a week first half of semester; six hours a week last half of semester.)

4. Testing.—Extending the work of course 2b. Each student is required to make a series of experiments, testing the physical properties of brick, stone, and cement. (Laboratory, three hours a week last half of semester.) Open to students who have completed course 8a in Civil Engineering and course 3 in Mechanical Engineering; required of all students in Civil Engineering.

5 hrs., 2d semester

(WING)

8c. Elements of Design.—Courses 8a and 8b abridged to meet the requirements of students taking Mining, Mechanical, or Electrical Engineering as a major. Special applications are made to hoisting and conveying structures, mill buildings, and central station buildings. (Hours to be arranged by consultation.)

Open to students who have taken courses 1 and 2 in Engineering, course 2 in Civil Engineering, and course 3 in Mechanical Engineering.

2 or 3 hrs., either or both semesters

(WING)

9. Railway Bridges.—This course comprises the determination of the stresses in modern types of railroad bridges, including cantilever and swing spans, masonry arches, and arch ribs; the discussion of the most economical types, spans, and dimensions of bridges and bridge members; the study of the methods of constructing sub-aqueous foundations, shop methods, erection, inspection of material, specifications, and other factors influencing the design of bridges. Designs of sub- and super-structure are made by each student to fulfill actual conditions, the parts proportioned, and bills of material prepared. Open to students who have completed course 8. (Lectures two hours per week, drafting nine hours.)

5 hrs., both semesters

(WING)

D. Hydraulic Engineering

12. Water-Supply Engineering for Towns and Districts.—Sources of supply. Collecting and storing of water, either for water supply of towns or for irrigation purposes. Settling, filtering, conducting, and delivering of water, including the study and design of all accessory works. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4a and 8a in Civil Engineering; required of all students who take their major in Hydraulic Engineering.

5 hrs., 1st semester

(MARX)

13. Sanitary Engineering.—Including sewerage of towns and drainage of lands. Special attention will be given to the study of all municipal sanitary problems, such as removal of sewage, destruction of garbage, construction, maintenance, sweeping, and repairs of streets and pavements. (Three hours lectures and recitations, six hours drafting.) Open to students who have completed courses 2 and 3 in Engineering and 4a, 8a, and 12 in Civil Engineering; required of all students who take their major in Hydraulic Engineering.

5 hrs., 2d semester

(MARX)

15. Construction of Canals, River and Harbor Improvements.—Lectures and designing as per arrangement. Open to students who have completed courses 2a, 2b, and 3 in Engineering, and 4a and 8a in Civil Engineering.

2 hrs., both semesters

(MARX)

16. **Technical Seminary.**—Study of German and French technical journals. Open only to fourth-year students in Civil Engineering. *2 hrs., both semesters* (MARX)

II. MECHANICAL ENGINEERING

Professor ALBERT WILLIAM SMITH.

Associate Professor GUIDO HUGO MARX.

Assistant Professors ANDREW ALLEN BROWNE, GEORGE FREDERICK MADDOCK.

Instructors JULIUS EMBRET PETERSON, EDWARD JOHN STANLEY, JAMES BENNETT LIGGETT.

Assistant ROBERT HUGHES GAITHER.

The following courses in Mechanical Engineering are offered. In connection with these the student takes courses in mathematics, theoretical and applied mechanics, chemistry, physics, and drawing, and may also elect such work from the general courses as time and preparation permit.

1. Shop Work.

a. *Woodworking.*—(Three exercises a week, half year.)

b. *Pattern-Making.*—(Three exercises a week, half year.)

c. *Forge Work.*—(Three exercises a week, half year.)

d. *Foundry Work.*—(Three exercises a week, half year.)

e. *Machine Shop Work.*—(Three exercises a week, through the year.)

Open to all students, and required of students in Mechanical Engineering. *3 hrs., each semester*

(BROWNE, PETERSON, STANLEY, LIGGETT)

2. **Elementary Machine Drawing.**—This work consists of practice in making freehand sketches of machine parts from which working drawings, tracings and blueprints are developed. (Six hours a week in drafting-room.) Open to students who have completed course 1a in Engineering.

2 hrs., either semester (GAITHER)

3. **Constructive Materials.**—Study of the manufacture and physical qualities of iron, steel, and alloys. Intended to prepare the student for selection of these materials for machine

parts. Open to students who have had elementary chemistry, and required of students in mechanical engineering. [Not to be given in 1903-04; in its place students will take course 11c in Geology and Mining.]

2 hrs., 1st semester

(G. H. MARX)

4. Elementary Machine Design.

a. Function of machines; motion, force, and work in machines. (Three hours a week, lectures and recitations, second semester.)

b. A drafting course applying the principles treated in *a.* (Six hours a week drafting, second semester.)

c. An abridged drafting course intended for major students in Geology and Mining. (Six hours a week drafting, beginning when the topic of motion in machines is reached in *a.*; one hour of credit.)

Open to students who have completed course 2 in Mechanical Engineering and course 1b in Engineering. Either *b* or *c* must be taken in connection with *a.* *a* and *b* are required of students in Mechanical Engineering.

4 or 5 hrs. 2d semester

(G. H. MARX)

5. Machine Design.—Study of machine details, such as fastenings (including riveted joints and boiler design); shafting and spindles; journals, boxes, and lubrication; ball and roller bearings; sliding surfaces; couplings and clutches; gear, belt, rope, and chain transmission systems; flywheels; springs; frames; and supports. (Two hours a week, recitations and lectures, six hours in the drafting-room, throughout the year.) Open to students who have completed course 4 in Mechanical Engineering, and who are taking course 2 in Engineering; required of students in Mechanical Engineering.

4 hrs., both semesters

(G. H. MARX)

6. Advanced Machine Design.—A drafting-room course consisting of the design of complete machines. Intended for fourth-year students who have completed course 5.

2 hrs., both semesters

(G. H. MARX)

7. Heat Engines.—Mechanical theory of heat and its applications. (Two lectures and six hours in the drafting-room a week.) Required of third-year students in Mechanical Engineering.

3 hrs., both semesters

(A. W. SMITH)

8. Experimental Engineering.—Mechanical laboratory. Testing of engines and boilers, and experimental investigation of correlated problems. Open to students who have completed course 7, and required of students in Mechanical Engineering.

2 hrs., both semesters (MADDOCK)

9. Pumping Machinery.—A lecture course for fourth-year students. Open to students who have taken course 7, first semester.

2 hrs., 2d semester (A. W. SMITH)

10. The Mechanical Engineering of Central Power Stations.—A lecture course open to students who have completed course 7.

2 hrs., 1st semester (A. W. SMITH)

11. Steam Engine Design.—A drafting-room course consisting of the design of different types of steam-engines. Intended for students who have completed course 7. Required of fourth-year students in Mechanical Engineering.

2 hrs., either semester

Shop and Laboratory Fees

Courses 1a and 1b, two dollars each; courses 1c and 1d, and 1e, four dollars each; course 8, two dollars per hour.

III. ELECTRICAL ENGINEERING

Professor ALBERT WILLIAM SMITH (in charge of administration).

Assistant Professor FRANK GEORGE BAUM.

Assistants JOSIAH PICKARD JOLLYMAN, ARION SIEGFRIED KALENBORN.

During the four undergraduate years, leading to the degree of Bachelor of Arts, the student in Electrical Engineering pursues, in addition to the technical studies outlined below, the following courses: 1, 2, 3, 4, 5, and 6 in Applied Mathematics; 1, 2, 3, 4, 7, 8, and 10 in Mechanical Engineering 1a, 1b, 2, and 3 in Engineering; 1 and a in Chemistry; 1, 6, and 7 in Physics. The student is at liberty to elect courses in other departments for which he may be prepared, and according to the time at his disposal.

Students intending to make Electrical Engineering their major subject should possess a special aptitude for mathematics and laboratory methods.

Attention is called to the fact that the first four years do not complete the course in Electrical Engineering, but that candidates for the degree of *Engineer* in Electrical Engineering are required to continue their course through a fifth year.

UNDERGRADUATE COURSES

1. **Elementary Electrical Engineering.**—A general elementary course. Three lectures and recitations, partly experimental, together with three hours laboratory work a week. Intended for all engineering students, and others who have completed courses 1, 2, 3, and 5 in Applied Mathematics, and courses 1 and 2 in Physics. It includes the elementary study of units of measurement, instruments, theory and design of the dynamo, the line and systems of distribution, transformers, motors, incandescent and arc lamps, electrometallurgy, etc.

4 hrs., 1st semester (—)

2. **Theory.**—General fundamental theory of Electrical Engineering. (Three lectures a week.)

3 hrs., 1st semester (BAUM)

3. **Elementary Alternating Currents.**—A course founded on the text of Bedell and Crehore. (Two lectures and three hours drafting per week.) *3 hrs., 2d semester* (BAUM)

4. **Continuous Current Measurements.**—Units of measurement and the theory of measuring instruments, bridge methods, galvanometers, ammeters, voltmeters, wattmeters, recording wattmeters, calibration of instruments, dynamo and motor testing, testing of cables and magnetic testing of iron, and photometry. Elementary alternating current measurements. Open to students taking course 2. (One lecture and six hours laboratory work per week.) *2 hrs., both semesters* (JOLLYMAN)

5. **Distribution.**—Conductors, systems of distribution, calculation and design of distributing systems, the economic problem of electrical distribution, materials and methods of construction for lighting, railway, telephone, and telegraph lines. (Two hours lectures and recitations, and three hours drafting.) Open to students who are taking course 2.

3 hrs., 1st semester (KALENBORN)

6. Dynamo Electric Machinery.—Theory and design of shunt, series and compound continuous current dynamos and motors. (Three lectures and recitations and three hours drafting.) Open to those who have completed course 5.

3 hrs., 2d semester (KALENBORN)

7. Central Station Design.—The economics, design, and management of central station systems; dynamos, switchboards, storage batteries, general arrangements, specifications, motors, lamps, meters, and transformers. (Two lectures and recitations.) Open to students having completed courses 2, 3, 4, 5, and 6.

2 hrs., both semesters

8. Alternate Current Working.—Graphic problems. Theory of the transformer, alternate current dynamo design and theory. Polyphase systems and dynamos, measurement of power; synchronous, induction, and other motors, polyphase transformers, rotary converters, special apparatus. Steinmetz's treatment. The advanced economic problem of the design of distributing systems. Open to students who have completed courses 3 and 6.

4 hrs., both semesters (BAUM)

9. Alternate Current Measurements.—Engineering problems and experiments in alternate current working. (Six hours laboratory work a week.)

2 hrs., both semesters (BAUM)

10. Recent Applications.—A free discussion of the most recent investigations and applications in electrical engineering appearing in the current electrical journals of America and Europe.

1 hr., both semesters (—)

11. The Galvanometer.—Lectures and recitations.

1 hr., 1st semester (—)

In connection with course 7 it is aimed to have as many special lectures as possible. A series of tours is also taken during the second semester, when an extended study of practical installations in San Jose, San Francisco, and Oakland is made.

The Department acknowledges free copies of the following journals: *The Electrical World and Engineer*, New York; *The Western Electrician*, Chicago; *The Journal of Electricity*, San Francisco; *The Street Railway Journal*, New York; *Electricity*, New York; *The Telephone Magazine*, Chicago.

FIFTH-YEAR COURSES

During the fifth year some of the following subjects will be studied, and one of them chosen for special attention.

13. **Dynamo Machinery Design.**—Advanced theory and practice of the mechanical and electrical design of direct and alternating current generators and motors.

14. **Advanced Alternating Current Theory and Practice.**—(Text: Steinmetz's Alternating Current Phenomena.)

(BAUM)

15. **Telegraphy and Telephony.**—The design and construction of telegraph and telephone lines, apparatus, and switchboards.

16. **Special Applications for Electricity.**—Apparatus for electric welding, mining, metallurgy; electrolysis in tanning, bleaching, purification of sewage, etc.

Laboratory Fees

Two dollars per semester in courses 1 and 9, and three dollars in course 4.

IV. MINING ENGINEERING

[See announcements of Department of Geology and Mining, pp. 140-143.]

V. CHEMICAL ENGINEERING

[See announcements of the Department of Chemistry, pp. 123-127.]

MANUAL TRAINING

Foreman EUGENE SOULE.

The work in Manual Training will consist of lathe work, bench work, carving, varnishing and polishing, burnt work, etc. Fifty hours of actual shop practice will be required for one hour of credit. Shop fee, three dollars.

1 hr., each semester

THE UNIVERSITY LIBRARY

MELVIN GILBERT DODGE, Associate Librarian.

LILLIAN PEARLE GREEN, Classifier.

FLORENCE HUGHES, Cataloguer.

ALICE NEWMAN HAYS, Supervisor Department of Serials.

HARROLD TRADER, Supervisor Shelf and Loan Department.

EDWARD PLAYFAIR ANDERSON, Supervisor Hildebrand Library.

MARY DRANGA GRAEBE, Assistant Cataloguer.

MARTHA ELIZABETH HAVEN, in charge of Accession Department.

BELLE HEBER THOMPSON, JESSE MARION BEACH, BENJAMIN CLIFFORD DEY, MERLE HARROLD THORPE, Loan-Desk Assistants.

ELIZABETH HADDEN, LULU MCCRAY MARTIN, IDA MAY PETERSON.
Copyists.

AGNES ELIZABETH BROWN, HELEN LATHROP, SHIRLEY MANSFIELD
CHARLES, Student Assistants.

TOM MARIE ALDERSON, FRANK WILSON DOAN, FREDERICK SCHNEIDER, ERNEST ELMER SOWELL, Law Library Assistants.

The Thomas Welton Stanford Library Building, a gift to the University from the Hon. Thomas W. Stanford, of Melbourne, Australia, occupies the center of the east half of the front façade in the outer quadrangle. The building has a frontage of one hundred and sixty feet and is one hundred and fifty-eight feet in width, including the ell. The stack-room, which forms the ell, is 70x74 feet. The main reading-room, lighted by a circular dome of stained glass forty feet in diameter, has a seating capacity of two hundred and twenty. On the first floor are also the cataloguing-room, the rooms for the reference library, and the offices of the librarian and associate librarian. On the second floor are six seminary rooms occupied by the following departments: Classical Languages, Modern Languages, English, Education, History, and Economics. The Law Library is located in the inner quadrangle, just back of the main library building.

The Library is open every University week day from 8 a. m. to 10 p. m., and on Saturday and during the shorter vacations from 8 a. m. to 3:30 p. m. Special hours are arranged for the summer vacation. Officers of the University, and students engaged in advanced work, upon recommendation of their instructors, have access to the shelves. Books that are not needed for special reference work are loaned for home use for a limited period. A temporary author-catalogue of the entire library, outside of the departmental libraries, has been made. A new card-catalogue, both by authors and by subjects, is being prepared. The cards for the sections of bibliography (including periodicals), philosophy, religion, sociology, history (including biography), and English literature are already completed.

The Library now numbers seventy-five thousand volumes. During the year ending July 31, 1902, there were added 9420 volumes. Of these, 1965 were by gift, the most notable being from Mrs. Jane L. Stanford, Mr. Thomas W. Stanford, President David S. Jordan, Mr. Timothy Hopkins, Mr. Charles G. Lathrop, Mr. Horace Davis, Professor George A. Miller, and the California Academy of Sciences.

The Library contains the following special collections:

The Timothy Hopkins Railway Library of six thousand volumes. This collection is unusually rich in material for the study of the early history of railways in Europe and America, and the donor has made provision for the maintenance and increase of the collection. A catalogue of the library has been published.

The Thomas W. Stanford Australasian Library of several thousand volumes and pamphlets relating to Australasia.

The Hildebrand Library, consisting mainly of works on Germanic Philology and Literature collected by the late Professor Hildebrand of Leipzig.

In addition to the University Library, various large collections within reach are available for reference, including the Free Public, Mechanics' Institute, Mercantile, and other libraries in San Francisco. There are also at the University several private libraries to which advanced students have access. Notable among these is Dr. Branner's Geological Library, a list of whose periodicals has been added to the University Library catalogue.

COURSE IN BIBLIOGRAPHY

General Bibliography.—The aim of this course is to give practical aid to students in the preparation of Bibliographies. Bibliographical method, the bibliographies of special subjects, and the principal books of reference will be discussed, and individual work carried out under direction in the University Library.

1 hr.. 2d semester

(DODGE)

LELAND STANFORD JUNIOR MUSEUM

HARRY C. PETERSON, Curator.

EDWIN ALONZO AUSTIN, Assistant Curator.

BUNKICHI SHIBATA, Museum Assistant.

In 1880, Leland Stanford, Jr., then eleven years of age, accompanied his parents on a trip through Europe. During this journey he purchased mementoes of the various places visited—at first merely with the object of having a collection to recall the pleasures of his European trip. Later he became ambitious to broaden his collection, and in 1883, on a second trip to Europe, found opportunity to pursue systematically his archaeological researches and acquisitions, with the idea of finally establishing a great museum. THE LELAND STANFORD JUNIOR MUSEUM was designed by Mrs. Stanford as a memorial to perpetuate this idea, and the large and valuable additions to the original collection are mainly her gift to the Museum.

The collection made by Leland Stanford, Jr., between 1880 and 1884, has been placed in two rooms (A and B), and in room A his own arrangement is reproduced in every detail, including all the labels written by himself. This collection was gathered, arranged, and catalogued by Leland himself before his fourteenth year. In the room adjoining (B) are found many interesting mementoes of his early life. Here also is the last collection made by him prior to his demise at Florence, Italy, March 13, 1884. These two rooms are especially rich in Egyptian bronzes, Tanagra Figurines, Greek and Roman glass, armor, mosaics, Sèvres and Dresden ware, etc. Owing to lack of space, additional material belonging to this room has been placed in Room T. It includes the "locomotive" hand car and trailer, buggies, fire engine, boat, etc., all being the personal belongings of Leland Stanford, Jr.

The Memorial room (O) was designed to contain the many personal mementoes of Senator and Mrs. Stanford. Here are found ancestral portraits of the Stanford and Lathrop fami-

lies; two cases devoted to the Grant family collection; racing trophies; Muybridge's first photographs of "Animals in Motion," and subsequent works; the "Last Spike," and other historical relics of the Central Pacific Railroad. To Mrs. Stanford is due the large assortment of beautiful rare lace—Point, Alençon, Chantilly, Duchesse, Honiton, Valenciennes, and others, also rare India shawls, fans, Worth dresses, antique jewelry, and European souvenirs.

The Di Cesnola Collection (rooms C and E) contains five thousand pieces of Greek and Roman pottery and glass from the Island of Cyprus, and next to that of the Metropolitan Museum of New York the largest collection in the world. A portion of the Greek and Roman material recently gathered by Mrs. Stanford has been placed on view in room D. It includes rare iridescent glass, Etruscan vases, Roman lamps, sculptured marble heads, and bas-reliefs of the first century. The Pompeian and Venetian cases are being arranged as fast as the articles arrive from Europe.

Rooms F, G, and H will be devoted exclusively to Egyptian and kindred collections and, when all the material is installed, will be one of the largest collections in America. It is especially complete in mummies, sarcophagi, responders, scarabs, beads, amulets, pottery, and mummy cloth embroideries, the latter the gift of Mr. Timothy Hopkins. Dr. W. M. Flinders Petrie and Mr. H. W. Seton-Karr are represented by several cases of valuable material. Mrs. Anna Lathrop Hewes also presented a large collection of varied and valuable objects. Among the recent additions (room H) may be mentioned the famous Kyticas Collection of veritable Egyptian antiquities, embroideries, beads, Palestine costumes, rare Sudanese and Bisherin armor, etc., all the gift of Mrs. Stanford.

The American Collection (I) is made up of mound relics, Indian baskets, utensils, Alaskan canoes, totem poles, etc. In this room is also a display of material of the stone age, purchased by Mrs. Stanford in Copenhagen, Denmark, as well as a choice collection of Samoan relics and war implements given by President Jordan.

The Corean Collection (room J), the gift of Mr. Timothy Hopkins, contains costumes, household goods, cabinets, screens, etc. Mr. Hopkins has also placed in the Museum a collection of ancient and modern coins and medals.

In the Chinese and Japanese room (K) there is a rich collection of bronzes, arms, china, lacquer, cabinets, musical instruments, and specimens of wood carving, including the imperial bed-room set, a marvel in wood carving and inlaid work.

During the spring of 1902, Mrs. Stanford paid an extended visit to the Hawaiian Islands and Japan. In room L will be found the result of her purchases for the Museum. The collection installed here is particularly rich in cloisonne, Satsuma, porcelain, embroideries, Buddhistic images, dwarf trees, and ivory carvings. The large bronze Koro in the center of the room is one of the most magnificent in the United States.

The Fine Arts Collections (rooms P, Q, R, S, T, U, and V) have been gathered mainly by Mrs. Stanford, many new additions having been made during the past year. A very full exhibit of copies of the old masters, especially Madonnas, has been hung in room U, while in room T will be found the famous Ford Collection of California Mission paintings, twenty-four in number. At the present time there are over five hundred paintings in the Museum, including pictures by Meissonier, Bouvier, Bonnat, Richter, Carolus-Duran, Van Wyck, Bierstadt, Ch. Landelle, Courtois, Piot, Munier, Brozik, Ricci, Mazonni, Keith, Hill, Charles Nahl, and many others. A recent addition given by Mr. Charles G. Lathrop, is the large painting by C. T. Wilson, the Bridal Veil Falls of the Colorado River. The Anna Lathrop Hewes collection of paintings, statuary, mosaic, etc., and a collection of pictures in oil and water colors presented by the Hon. Thomas Welton Stanford, of Australia, are also noteworthy. The ceramics collected by Mrs. Stanford include Sèvres, Dresden, Royal Berlin, Persian, Pompadour crystal, Bohemian, and numerous other wares.

In the Natural History department, temporarily placed in room K, there is a large collection of birds' eggs and skins, donated by the late Thomas Flint, of San Francisco. With them is a collection of mounted mammals, the most important being a series of the fur seals of the Pribilof Islands, pre-pared by President Jordan. The nucleus of a mineral exhibit is in Room X.

The Stanford Historical Collection is now being gathered, and is for the present installed in room S. Many of the orig-

inal sketches of the competitive plans of the University are here, including the large birdseye view of the accepted plans by Sheply, Rutan, and Coolidge, of Boston, Mass. A full-sized photographic reproduction of the Endowment Grant, presented by Crothers and Crothers, early photographs of construction, etc., are among the exhibits of Room T. It is especially requested that all members of the Alumni send in any material they may have for this department. Articles especially desired are photographs of University life and incidents from 1887 to date; also lithographs, illustrations, press clippings, souvenirs, etc.

To Mr. F. W. Covey is due the formation of the Palo Alto Stock Farm exhibit, which, when completed, will prove of special value to all interested in blooded stock. At present it is placed in the Stanford room, and contains many photographs, oil paintings, etc., of celebrated horses; mounted skeletons of Occident, Electioneer, and Palo Alto; the greatest and last of the high-wheeled sulkies; as well as other articles associated with the history of the Stock Farm.

Through the courtesy of Wells, Fargo & Co., all gifts intended for the Museum will be transported free of charge over their lines if addressed to The Curator, Leland Stanford Junior Museum, Stanford University, California.

THE MEMORIAL CHURCH

The Rev. R. HEBER NEWTON, D. D., Select Preacher.

The Rev. D. CHARLES GARDNER, Chaplain.

Mr ARTHUR L. SCOTT BROOK, Organist.

The MEMORIAL CHURCH, "erected to the glory of God and in loving memory of my husband, Leland Stanford," was dedicated January 25, 1903. The building stands in the center of the inner quadrangle group facing the main entrance. It is of modified Moorish-Romanesque architecture, and in the form of a cross with rounded ends. The extreme length, through vestibule, nave, and apse, is one hundred and ninety feet; the extreme width, through transept wings, one hundred and fifty-five feet. The four gables of nave, transept wings, and apse are united by a twelve-sided belfry tower, whose spire, surmounted by a cross, rises to a height of one hundred and eighty-eight feet. Exteriorly the tower is flanked upon the four corners by turrets rising from the angle between the gables. It is engirdled at the base by an outside gallery, and is strengthened by an effective use of the flying-buttress. The tower contains the clock with its four faces, a chime of four bells, tuned to correspond with the Westminster chimes, and twenty-four pictorial windows. The church is built of buff sandstone, rough-hewn, with tooled face on the inside, relieved by elaborate carved designs and fifteenth-century mosaics of great beauty. The features of the apse are the marble altar with its candelabra, life-size marble figures, and bas-relief of Gulio Ciseri's painting of "The Entombment," the three great stained-glass windows, the marble statues of the twelve apostles, and the mosaics covering the entire wall surface. Behind the altar is a replica of Cosimo Rosselli's "Last Supper," from the Sistine Chapel at Rome. To the right and left, running to the arch of the apse, are long panels, a *gloria dei angeli*, surmounted by reproductions, in mosaic, of Michael Angelo's prophets. The cove ceiling, springing from the crown

of the great arches, is also done in mosaic representing angels with trumpets. This cove-ceiling narrows to a thirty-two foot open circle, and through this is seen the frescoed ceiling of the true dome, one hundred and six feet above the floor. The nineteen large stained-glass windows of nave, transept, and apse, in a series of beautiful designs, illustrate the life of Christ. The windows of the clerestory contain single figures of Old and New Testament characters. Above the organ gallery is the beautiful rosette window with Hoffman's Christ child as a center picture. Flanking the rose window is the great organ, separated into two parts, with the console near the center of the gallery rail. The organ has forty-six stops and nearly three thousand pipes, and the several parts are connected and operated by electricity. The seating capacity of the Church, including galleries, is about seventeen hundred.

The Memorial Church is non-sectarian in character and method. It is bound by no sectarian creed, or book, or polity. At the same time it is linked to historic Christianity through its ministry and sacraments. The services are informal and varied, following no particular liturgy, and yet conserving the great principles of Christian worship. The sacrament of the Lord's Supper is administered on the first Sunday of each month, and to this are invited "all them that love the Lord Jesus Christ in sincerity and truth." Students are welcomed into the fellowship of the Memorial Church. Members of churches may present their letters upon entering, and when leaving these will be duly transferred to the home church, or to such other as may be selected.

Dedication of the Memorial Church—January 25, 1903

Morning Service

Organ Prelude, "Larghetto"—*Best*.

Scripture Sentence. The Rev. D. CHARLES GARDNER, Chaplain.

Prayer. The Rev. JOHN HEMPHILL, Calvary Presbyterian Church, San Francisco.

Hymn, "Come Thou Fount of Every Blessing."

Responsive Reading, Psalm 84. The Rev. FRANK L. HOSMER, First Unitarian Church, Berkeley.

Anthem, "The Marvelous Work Behold"—*Haydn*. Soloist, Miss E. JERALDINE BROWN.

First Lesson, Solomon's Prayer at the Dedication of the Temple, II Chronicles, vi. The Rabbi JACOB VOERSANGER, D. D., Temple Emanuel, San Francisco.

Hymn, "The Forests Gave Their Oak and Pine."

Second Lesson, Acts vii., 47-49; xvii., 24-28; John iv., 19-24; II Corinthians, vi., 16; Revelations xxi., 1-4, 22; John i., 14. The Rev. CHARLES R. BROWN, First Congregational Church, Oakland.

Prayer. The Rev. E. R. DILLE, First Methodist Church, Oakland.

Sermon. The Rev. R. HEBER NEWTON, D. D., Select Preacher to the University and Pastor of the Memorial Church.

Prayer of Dedication. The Rev. R. HEBER NEWTON, D. D.

Hymn, "All Gifts are Thine: No Gifts Have We."

Prayer. The Rev. C. M. HILL, Tenth Avenue Baptist Church, Oakland.

Benediction. The Rev. R. C. FOUTE, D. D., Rector of Grace Church, San Francisco.

Hymn, "America."

Organ Postlude, "Memorial March"—*Scott Brook*.

Afternoon Service

Organ Prelude, "Consolation"—*Mendelssohn*.

Scripture Sentence and Prayer. The Rev. D. CHARLES GARDNER.

Hymn, "Unto Thy Temple, Lord, We Come."

Address. The Rev. CHARLES R. BROWN, First Congregational Church, Oakland.

Organ, "Grand Offertoire in D Minor"—*Batiste*.

Anthem, "Achieved is the Glorious Work"—*Haydn*. Soprano, Miss VIVIAN BAILEY; Tenor, Mr. J. G. BROWN; Bass, Mr. W. F. HYDE.

Address. The Rev. FREDERICK W. CLAMPETT, D. D., Trinity Church, San Francisco.

Contralto Solo, "O Divine Redeemer"—*Gounod*. Mrs. MARY ROBERTS SMITH.

Organ Fantasie in C Minor—*Lemmens*.

Address. The Rev. D. CHARLES GARDNER, Chaplain of the Memorial Church.

Hymn, "O Thou, Whose Own Vast Temple Stands."

Prayer and Benediction. The Rev. R. HEBER NEWTON, D. D.
Hallelujah Chorus—*Handel*. Festival Choir.

Special Preachers, 1902-03

The Rev. JENKIN LLOYD JONES, Chicago Ill.—*The Harmonies
of Worship*.

The Rev. H. W. THOMAS, D. D., Chicago, Ill.—*The Things That
Abide*.

Baccalaureate Sermon—May 25, 1902.

The Rev. FREDERICK W. CLAMPETT, D. D., San Francisco—*Per-
fection of Character*.

UNIVERSITY LECTURES, ETC.

UNIVERSITY LECTURES

Public lectures on subjects of general interest, by members of the Faculty or by persons invited from abroad, are given from time to time. The following is the list of such lectures for the calendar year ending March, 1903:

Dr. AGNES KELLY, London, England—*The Life of Women in English Colleges.*

President DAVID STARR JORDAN—1. *The Making of Stanford Men.* 2. *Samoa*, with lantern illustrations.

President BENJAMIN IDE WHEELER, University of California—*How People Look at Their Own Language.*

Mrs. JOSEPHINE RAND ROGERS—Readings from Stephen Phillips's *Paolo and Francesca.*

The Rev. CHARLES R. BROWN, Oakland—*The Greatest Man of the Nineteenth Century.*

Mr. EUGENE SOULE—*Leland Stanford in California.*

Professor KATHERINE COMAN, Wellesley College—*The Anthracite Coal Strike in Pennsylvania.*

Mr. FRANK H. BATES—*The Gas Engine and the Manufacture and Use of Petroleum Gas.*

Dr. C. HART MERRIAM, U. S. Department of Agriculture—*Protective and Defective Coloration in Animals*, illustrated with lantern slides.

Mr. ELMER E. CORTHELL, Consulting Engineer for the Argentine Republic—*Argentine, Past and Present.*

Dr. ADRIAN HOFMEYR, College of South Africa—1. *My Prison Experiences in Pretoria.* 2. *The Limbabwe Ruins.* 3. *Cecil Rhodes.*

The Rev. JENKIN LLOYD JONES, Chicago, Ill.—*Character.*

Professor SOLOMON HENRY CLARK, University of Chicago.—Readings from Stephen Phillips's *Ulysses.*

Congress of Religion—March 14, 1903

Addresses by the SWAMI RAM, M. A., representing the

Vedanta philosophy and religion (India); ANAGARIBA DHARMAPALA, from Ceylon, representing Buddhism; DR. EMLYN LEWYS, B. A., of England, representing the Jain religion (India); the REV. R. HEBER NEWTON, D. D., representing Christianity; the REV. JENKIN LLOYD JONES, of Chicago, presenting the "Unities of Worship"; and the REV. H. W. THOMAS, D. D., of Chicago, presenting the "Unities of Faith."

MUSICAL RECITALS, ETC.

1. By the Pupils of Miss FANNIE DAM HILTON.
2. By the Knickerbocker Concert Company.
3. By the Royal Italian Band.
4. By the Columbia Park Boys Club Chorus, San Francisco.
5. By MR. ARTHUR FICKENSCHER, MRS. GRACE DAVIS NORTHRUP, MR. SAMUEL SAVANNAH, MR. E. SCHLOTT, and others.
6. By "The Kilties."
7. By the Girls Glee Club.
8. By the University Orchestra.
9. Presentation of Beaumont and Fletcher's *Knight of the Burning Pestle*, by the English Club (March 5, March 7, 1903).

UNIVERSITY ASSEMBLIES

A general meeting of students and instructors in Assembly Hall twice a month at the third or fourth morning hour. All University exercises are suspended and the Library and laboratories are closed during the Assembly hour. The exercises include addresses and music.

November 5, 1902. Addresses by President JORDAN and Professor FARRAND on *College Spirit*.

November 20. Addresses by Professor A. W. SMITH on *College Spirit and Boating*, and by Mr. FAIRFAX H. WHEELAN on *American Ideals*.

December 10. Addresses by Professor STILLMAN, the Rev. R. HEBER NEWTON, Professor CLARENCE J. BLAKE of the Harvard Medical School, and Professor H. MORSE STEPHENS of the University of California.

January 8, 1903. Address by Mr. BOOKER T. WASHINGTON, of Tuskegee, Alabama, on *The Race Problem in the South*.

January 28. Addresses by Mr. WILLIAM GREER HARRISON, of

San Francisco, and Mr. JAMES F. LANAGAN, '00, on *College Athletics*.

February 25. Addresses by President JORDAN, on *Things I Don't Like at Stanford*, and by Mr. WILLIAM T. REID, of Belmont, on *Stanford University as Seen from the Outside*.

March 10. Address by Dr. GEORGE R. PARKIN, of Oxford University, on *The Relations Between the Two Great Anglo-Saxon Nations and the Rhodes Scholarship*.

In Memoriam, GEORGE MANN RICHARDSON, HERBERT CHARLES NASH—October 7, 1902.

Addresses by Professors STILLMAN, ANGELL, and ABBOTT, Dr. ELLIOTT and Mr. DODGE. President JORDAN presided.

Laying of the Cornerstone of the Leland Stanford Junior University Gymnasium—December 11, 1902.

Music, "Hail, Stanford, Hail." University Band.

Invocation. The Rev. R. HEBER NEWTON, D. D.

Addresses by President JORDAN, Professor ANGELL, and Mr. CHARLES M. FICKERT, '98.

History of the Gymnasium. Mr. CHARLES W. THOMAS, '03.

Congratulatory Address. Miss HELEN K. NORTH, President Roble Gymnasium Club.

Raising of the Flag.

Music, "America." University Band.

Addresses by Messrs. HOWARD S. LEE, FREDERICK A. BROWN, JOHN C. MCCAUGHERN, CLEVELAND H. BAKER, ROYCE R. LONG, and CARL F. DITTMAR.

Benediction. The Rev. D. CHARLES GARDNER.

Commencement Address—May 28, 1902

Professor AUGUSTUS TABER MURRAY—*A Parallel and a Lesson*.

INTERCOLLEGIATE DEBATES

INTERCOLLEGIATE DEBATE

AN INTERCOLLEGIATE DEBATE, under the auspices of the Associated Students of the University of California and of the Leland Stanford Junior University, is held in San Francisco in April of each year. Mr. James Moffatt, of Oakland, has, since 1899, offered an annual prize of \$200 to the speakers on the winning side.

The question for 1903 is, "*Resolved*, That the United States should not attempt under all circumstances to prevent the acquisition of territory in South America by European powers."

The Stanford contestants are HOWARD MILTON LEWIS, FRANK ROEHR, OMAR CORWIN SPENCER; alternate ARTHUR M. DIBBLE.

CARNOT DEBATE

The Carnot Medal, presented by the Baron de Coubertin, for the purpose of encouraging the study and discussion, in California, of French history and politics, is awarded annually to the student who, in the opinion of the judges, proves himself the best debater in a contest held for the purpose between Stanford University and the University of California.

Under the rules for 1903, a general subject for the debate was announced on November 14, 1902, but the particular phase of the question, as embodied in a resolution, was not made known to the contestants until one hour before the time set for the debate.

The general subject for 1903 was the relation of the French government to the railways, and the particular question debated was, "*Resolved*, That it would be commercially and politically advantageous for France to abandon her present railroad policy." The debate was held at Stanford University, February 13, 1903. The contestants were CHARLES FRANK STERN, MAX THELEN, and ALFRED BERTRAM WEILER, of the Uni-

versity of California, and HOWARD MILTON LEWIS, OVID HERBERT RITTER, and FRANK ROEHR, of Stanford. The judges were the Hon. FRANK M. ANGELOTTI of the Supreme Court of California, The Rt. REV. WILLIAM FORD NICHOLS, D. D., Bishop of the Protestant Episcopal Diocese of California, and VANDERLYN STOW, Esq., of San Francisco. The medal was awarded to MAX THELEN of the University of California.

WASHINGTON DEBATE

An agreement was entered into in 1902, between the students of the University of Washington and of the Leland Stanford Junior University providing for two annual debates, the first to be held at Stanford University, May 2, 1902, the second at the University of Washington, in 1903.

The question for 1903 is, "*Resolved*, That the English Constitution is more democratic than that of the United States."

The Stanford contestants are JOSEPH HENRY PAGE, OVID HERBERT RITTER, ALEXANDER SHERIFFS; alternate WALTER C. MALOY.

UNIVERSITY ASSOCIATIONS

PHILOLOGICAL ASSOCIATION

Professor AUGUSTUS TABER MURRAY, *President*.

Assistant Professor WILLIAM ALPHA COOPER, *Secretary*.

The UNIVERSITY PHILOLOGICAL ASSOCIATION was organized September 17, 1892, for the purpose of reading and discussing the results of scientific investigations in language and literature. The membership consists of the instructors and advanced students in the different language departments in the University. The regular time of meeting is the last Thursday of each academic month, at 2:30 p. m. The following papers were presented during the calendar year ending February, 1903.

April 24, 1902. Professor JULIUS GOEBEL—*Faust as a Document of Goethe's Inner Life*.

May 22. Assistant Professor KARL G. RENDTORFF—*Uhland's Francesca da Rimini*. Professor AUGUSTUS TABER MURRAY—*The Dramatic Blemish in Sophocles's Antigone*.

September 25. Assistant Professor WILLIAM ALPHA COOPER—*Das Strassburger Rätselbuch*.

October 30. Dr. BENJAMIN OLIVER FOSTER—*The Latin Supine*. Associate Professor OLIVER MARTIN JOHNSTON—*The Old French Adverb tote jor*.

December 4. Assistant Professor PIERRE JOSEPH FREIN—*Note on Promptuarium Exemplorum*. Mr. EDWARD KIRBY PUTNAM—*The Scalacronica version of Havelok*. Assistant Professor JEFFERSON ELMORE—*Livy's Account of Roman Comedy*.

January 29, 1903. Professor EWALD FLÜGEL—*The Middle English Claudian*. Assistant Professor COLBERT SEARLES—*Wieland and the French Stage*.

February 26. Professor AUGUSTUS TABER MURRAY—*On Gemoll's Text of Xenophon's Anabasis*. Professor EWALD FLÜGEL—*The First Old English Words Printed*.

THE SCIENCE ASSOCIATION

Professor LEANDER MILLER HOSKINS, *President*.

Associate Professor HAROLD HEATH, *Vice-President*.

Assistant Professor HANS FREDRIK BLICLFELDT, *Secretary*.

The SCIENCE ASSOCIATION was organized January 17, 1894. Original investigations and papers of general interest on scientific topics are presented from time to time.

The following papers were read before the Association between September, 1901, and April, 1902:

Assistant Professor GEORGE ABRAM MILLER—*Some Fundamental Discoveries in Mathematics*.

Dr. ANSTRUTHER ABERCROMBIE LAWSON—*Studies on the Karyokinetic Spindle in Plants*.

Professor LEANDER MILLER HOSKINS—*The Age of the Earth*.

Professor WILLIAM JOSEPH HUSSEY, Lick Observatory—*Double Stars*.

THE HOPKINS LABORATORY

Professors CHARLES HENRY GILBERT and OLIVER PEEBLES JENKINS, *Directors*.

The HOPKINS SEASIDE LABORATORY, founded by the liberality of Mr. Timothy Hopkins, of San Francisco, is an organic part of the work of the University, and for advanced biological study constitutes a summer session of the University. The buildings are located at Pacific Grove, two miles west of Monterey, and stand on a low bluff immediately facing the sea. They consist of two two-story structures capable of accommodating about eighty students, and contain four general laboratories, one lecture-room, seventeen private rooms for special investigators, and a dark-room for photography. They are provided with aquaria and running water, and all necessary facilities for biological study. The library and apparatus of the University are available for use in the Laboratory.

SESSION OF 1902

The eleventh session of the Laboratory was held during the summer of 1902, beginning June 9th.

Instructors

Associate Professor GEORGE CLINTON PRICE.

Instructor ANSTRUTHER ABERCROMBIE LAWSON.

JOSEPH GRINNELL, Graduate Student, Leland Stanford Junior University.

Assistants in the Laboratory

MILO HERRICK SPAULDING, Student in Zoology, Leland Stanford Junior University.

MARY ISABEL MCCracken, Student in Physiology, Leland Stanford Junior University.

Courses of Instruction

1. **General Zoology.**—A course designed for teachers and others desiring an acquaintance with the anatomy and life-

habits of marine animals, and with the methods pursued in laboratory study. Lectures, laboratory dissections, and field work. (PRICE)

2. **Elementary Botany.**—A general introduction to the subject of Botany, especially designed for teachers and others who desire an acquaintance with the structure and habits of plants. Laboratory work, supplemented by lectures. (LAWSON)

3. **Introduction to the Study of Seaweeds.**—A course devoted to a study of the principal types of Marine Algæ found in the vicinity of Pacific Grove. Laboratory work, and instruction in methods of collecting and mounting specimens. (LAWSON)

4. **Plant Cytology and Microtechnique.**—A course dealing with the structure and development of the cell and cell organs in the various groups of plants. Laboratory instruction in the principles and methods of killing, fixing, imbedding, sectioning, and staining of material for cytological study, supplemented by lectures. (LAWSON)

5. **Embryology.**—A course devoted principally to a study of the development of vertebrates, attention being given to embryological technique, such as the preparation of surface views and of serial sections. (PRICE)

6. **Advanced Course in Zoology.**—A course designed for those who have had at least one year's work in either Zoology or Physiology, and consisting of the dissection of a number of marine invertebrates and a study of larval forms. Frequent collecting trips. (PRICE)

7. **General Ornithology.**—Laboratory work consisting of practice in the identification of birds and preparation of study-skins, study of plumage structures, and dissections to demonstrate the gross anatomy of a typical bird. Field excursions to acquaint students with the notes and habits of the more common California species. Lectures on distribution, migration, moult, classification, and economic relations of birds. (GRINNELL)

. Students

I. Those Occupying Investigators Rooms

WILLIAM FITCH ALLEN, A. B., Student in Zoology, University.

JOHN SAMUEL BURCHAM, A. B., Student in Zoology, University.

ANTON JULIUS CARLSON, A. M., Student in Physiology, University.

NEWTON CLEVELAND, A. B., Instructor in Physiology, University.

W. E. GARREY, Ph. D., Professor of Physiology, Cooper Medical College.

CHARLES WILSON GREENE, Ph. D., Professor of Physiology, University of Missouri.

HAROLD HEATH, Ph. D., Associate Professor of Zoology, University.

OLIVER PEEBLES JENKINS, Ph. D., Professor of Physiology, University.

FRANK MACE MCFARLAND, Ph. D., Associate Professor of Histology, University.

HELEN HALL MILLS, A. B., Graduate Student, University.

FLORA ALBERTINE RANDOLPH, A. B., Student of Botany, University.

EDWIN CHAPIN STARKS, Curator in Zoology, University.

II. Those Taking Regular Courses

ALLAIRE, GRACE MAUD, Student in German, University.

BARKAN, HANS, Student in Physiology, University.

BROWN, ALICE MARY, Student in Zoology, University.

CHAMBERLIN, RALPH V., B. S., Professor of Biology, Latter Day Saints University, Salt Lake City, Utah.

COURTRIGHT, NELLIE BROOKS, Student in Latin, University.

CRAMER, SOPHIA, Student in German, University.

CRUTCHER, DAVID ERNEST, Student in Manzanita Hall, Palo Alto.

FROST, MARTHA MAHALAH, Student in German, University.

GOODALL, CHARLES, Student in Manzanita Hall, Palo Alto.

GREEN, RALPH W., Student, Palo Alto High School.

HALE, ALICE STANIFORD, Student in History, University.

HART, ETHEL TERRY, Student in Romanic Languages, University.

JENKINS, HUBERT OLIVER, Student, Palo Alto High School.

KELLY, VIRGINIA M., Student in Physiology, University.

LEE, ANDRÉ EDWARD, Student in Physiology, University.

LEIB, ROY CHILTON, Student in Law, University.

LEVY, LEON GAMBETTA, Student in German, University.

LEWIS, HOWARD MILTON, Student in Economics, University.

LIDDLE, CARRIE WALKER, Student in Education, University.

STILLMAN, EDGAR, Student in Chemistry, University.
McCRACKEN, MARY ISABEL, Student in Physiology, University.
MOREHEAD, ALMA, Student in Mathematics, University.
NEWBURG, MERVYN JACOBS, Student in Chemistry, University.
O'NEAL, JULIA H., Teacher in Private School, Corning, Calif.
PALMER, CLAYTON F., B. S., Teacher of Natural Science, State
Normal School, Mansfield, Pa.
PARKER, PAUL PERCY, Student in History, University.
PARSONS, EDITH FERRIS, Student in English, University.
RANDALL, WILLIAM RAMSEY DOWS, Student in Physiology, University.
ROCKEY, PAUL, Student in Physiology, University.
ROWELL, EDNA ELLEN, Student in Physiology, University.
ROWELL, OLA, Student in State Normal School, San Jose, Calif.
RUSK, HESTER, Student in Economics, University.
ROSS, HALL CARLOS, Student in Law, University.
TALBERT, FRANKLIN LILBURN, Student in Economics, University.
WHITE, MAY HOUGHTON, Student in Zoology, University.

SESSION OF 1903

The session of 1903 will begin Monday, June 8th. No elementary work will be undertaken, and no regular courses of instruction are planned. Provision for advanced students and investigators will be made.

Fees

To investigators, the facilities of the Laboratory are offered free. All others will be charged a fee of twenty-five dollars.

CATALOGUE OF STUDENTS

NAME	HOME ADDRESS	MAJOR SUBJECT
Abbott, Dorothy,	<i>Stanford University,</i>	History
Abbott, Frank,	<i>Los Angeles</i>	Law Sp.
Abrams, Le Roy,	<i>Inglewood,</i>	Botany
A. B., Stanford, 1899, A. M., 1902.		
Ackerman, Irving Charles,	<i>San Francisco,</i>	Law
Adams, Irving W.,	<i>San Jose,</i>	Electrical Eng.
Adams, Katherine,	<i>Wrights,</i>	Education
Alcott, Robert Kerr,	<i>Minneapolis, Minn.,</i>	Economics
Alden, Mary Estelle,	<i>San Jose,</i>	English
Alder, Margueritte,	<i>Redlands,</i>	Greek
Alderman, Rupert Lewis,	<i>Santa Clara,</i>	Law
A. B., Stanford, 1901.		
Alderson, Tom Marie,	<i>Mayfield,</i>	Law
A. B., Stanford, 1902.		
Allaire, Grace Maud,	<i>Palo Alto,</i>	German
Allen, Ben Shannon,	<i>Woodland,</i>	Law
Allen, Chester Boyce,	<i>San Jose,</i>	Geology and Mining
Allen, Clifford Gilmore,	<i>Palo Alto,</i>	French
A. B., Boston Univ., 1900.		
Allen, Genevieve,	<i>Palo Alto,</i>	Chemistry
Altnow, George Gustav,	<i>Everett, Wash.,</i>	Philosophy
Alvarado, John Bolton,	<i>San Rafael,</i>	Geology
Alvord, John Hartwell,	<i>Ventura,</i>	English
Ames, Alden,	<i>San Francisco,</i>	Law
Anderson, Charles William,	<i>Ottumwa, Ia.,</i>	Economics
Anderson, Chloe Case,	<i>San Jose,</i>	English
Anderson, Ervin Leech,	<i>Palo Alto,</i>	Latin
Anderson, Irving,	<i>Wallace, Idaho,</i>	Geology
Anderson, Malcolm Playfair,	<i>Menlo Park,</i>	Zoology
Anderson, Robert Van Vleck,	<i>Menlo Park,</i>	Geology
Aniya, Seishu,	<i>Mayfield,</i>	Economics Sp.
Anju, Shohachi,	<i>Saga, Japan,</i>	Economics
Applegate, Bessie Bell,	<i>Klamath Falls, Or.,</i>	English
Appleton, Claude Rutherford,	<i>San Jose,</i>	English

Arce, Louis,	<i>San Francisco,</i>	Civil Eng.
Armstrong, Ione,	<i>Great Falls, Mont.,</i>	English
Arnold, Alice Eugenia,	<i>Los Angeles,</i>	English
Arqués, Francisca Luisa,	<i>San Jose,</i>	Romanic Lang.
Ashley, Florence Josephine,	<i>Stockton,</i>	English
Ashton, George Humboldt,	<i>Palo Alto,</i>	Electrical Eng. <i>Sp.</i>
Atherton, Cecelia Freeman,	<i>Lakeport,</i>	History
Atkinson, Harry Hunt,	<i>Salt Lake City, Utah,</i>	Law
Atwood, Clarence Goodrich,	<i>Fernando,</i>	Law
Austin, Arthur Oswin,	<i>Stockton,</i>	Electrical Eng.
Austin, Edwin Alonzo,	<i>Stockton,</i>	Mining Eng.
Austin, Reginald,	<i>San Jose,</i>	Geology and Mining
Avery, Ethel Elizabeth,	<i>Ft. Collins, Colo.,</i>	History
Avery, Marietta Louise,	<i>Ft. Collins, Colo.,</i>	English
Avery, Noyes Latham,	<i>Grand Rapids, Mich.,</i>	Economics
Avery, Paul W.,	<i>Ogden, Utah,</i>	Physiology
Ayres, Julia Caswell,	<i>Berkeley,</i>	Physiology
Ayerst, Bellezemere,	<i>Seattle, Wash.,</i>	French <i>Sp.</i>
Bacon, George,	<i>Haddonfield, N. J.,</i>	Chem. <i>Sp.</i>
Bacon, Sanford Lord,	<i>San Jose,</i>	Law
Bailey, Forrest Cutter,	<i>San Jose,</i>	English
A. B., Stanford, 1901.		
Bailey, Laura Chapin,	<i>San Jose,</i>	Economics
Bairos, Manuel Benjamin,	<i>Biggs,</i>	Chemistry
Baker, Anne Hollis,	<i>San Francisco,</i>	French
Baker, Charles Fuller,	<i>St. Louis, Mo.,</i>	Zoology
B. S., Michigan Agricultural Coll., 1891.		
Baker, Cleveland Hall,	<i>Oakland,</i>	Law
Baker, Grace Amelia,	<i>Sorrento,</i>	English
Balcomb, Alona,	<i>Stanford Univ.,</i>	Education <i>Sp.</i>
Balcomb, Ernest Elwell,	<i>Stanford Univ.,</i>	Education
Balcomb, Mary Florence,	<i>Mayfield,</i>	English
Baldwin, Florence May,	<i>Palo Alto,</i>	English
A. B., Pomona Coll., 1901.		
Baldwin, Gracé Sarah,	<i>Ontario,</i>	History
Ball, Chester Alexander,	<i>Woodland,</i>	Law
Ball, Robert Bruce,	<i>Banning,</i>	Civil Eng.
Balle, Sophia Margurite,	<i>Denison, Ia.,</i>	German
Bansbach, Antonia Ethel,	<i>Denver, Colo.,</i>	German
Bansbach, Louis Philip,	<i>Denver, Colo.,</i>	Law
Baptista, John Maximilian,	<i>New Bedford, Mass.,</i>	Economics

Barber, William Burton,	<i>Alameda,</i>	Geology
A. B., Stanford, 1902.		
Barkan, Hans,	<i>San Francisco,</i>	Physiology
Barnard, Jessie Elizabeth,	<i>Chico,</i>	History
Barnett, George De Forest,	<i>Santa Rosa,</i>	Chemistry
Barnett, Mary Amelia,	<i>Santa Rosa,</i>	Zoology
Barnett, Raymond Griffin,	<i>Kansas City, Mo.,</i>	Law
Barnhisel, Walter Benedict,	<i>San Jose,</i>	Law
Barnhouse, Mabel,	<i>Watsonville,</i>	Latin
Barret, Grace Ligon,	<i>Redwood City,</i>	German
Barrett, Richardson Damon,	<i>Herman, Minn.,</i>	Economics
Barrett, Richard Watts,	<i>Edenvale</i>	Law
Bartell, Max John,	<i>The Dalles, Or.,</i>	Geol. and Min.
Bartlett, Pearl Muriel,	<i>Fallbrook,</i>	English
Barton, George Castle,	<i>Garden Grove,</i>	History
Bartruff, Jeannette Eleanor,	<i>Palo Alto,</i>	Latin
Bartruff, Mary Macbride,	<i>Palo Alto,</i>	English
Bartruff, Zoë Sara,	<i>Palo Alto,</i>	English
A. B., Stanford, 1900.		
Batcheller, Blanche,	<i>Palo Alto,</i>	Physiology <i>Sp.</i>
Baum, Anna Caroline,	<i>Palo Alto,</i>	German <i>Sp.</i>
Baum, Mabel Helen,	<i>Denver, Colo.,</i>	Romanic Lang.
Beach, Everett Charles,	<i>Colton,</i>	Physiology <i>Sp.</i>
Beach, Jesse Marion,	<i>Colton,</i>	Chemistry
Beach, True Ellen,	<i>Placerville,</i>	Physiology <i>Sp.</i>
Beamer, Muriel Adelaide,	<i>Los Angeles,</i>	Latin
Bean, Jane Louise,	<i>San Jose,</i>	History
Beardsley, Charles Alexander	<i>Campbell,</i>	Law
Beasley, Etta Goldie,	<i>Modesto,</i>	Physics
Beebe, Graham Hughes,	<i>Porterville,</i>	Law
Beebe, Lela,	<i>Watsonville,</i>	Physiology
Beecher, Flora Belle,	<i>Santa Cruz,</i>	History
Beeger, Gertrude,	<i>Redwood City,</i>	German
Beggs, Lulu Mabel,	<i>Los Gatos,</i>	English
Behlow, Edgar Augustus,	<i>San Francisco,</i>	Electrical Eng.
Bell, Eric Temple,	<i>San Jose,</i>	Mathematics
Bell, Harry Wesley,	<i>Healdsburg,</i>	Mining Eng.
Bell, Jessie Frances,	<i>Palo Alto,</i>	Economics
Bell, Ruby Green,	<i>Stanford University,</i>	Zoology
A. B., Stanford, 1902.		
Bennett, Frank Waite,	<i>Phoenix, Ariz.,</i>	Law

Bernhard, George William,	<i>Fresno,</i>	Electrical Eng.
Berry, Jessie Verna,	<i>Alameda,</i>	Chemistry
Bértheau, Rudolf César,	<i>San Francisco,</i>	Law
Berwick, Alice Mabel,	<i>Pacific Grove,</i>	French Sp.
Betz, Mary Elizabeth,	<i>Spokane, Wash.,</i>	Mathematics
Billings, William Elbridge,	<i>Concord,</i>	Law
Bird, May Frances,	<i>Yreka,</i>	English
Bird, Susan Frances,	<i>Banning,</i>	English
Bissell, Frank Anson,	<i>Palo Alto,</i>	Philosophy

A. B., Western Reserve Univ., 1876; B. D., Yale Univ., 1879.

Bittner, Harvey Peter,	<i>Albuquerque, N. M.,</i>	German
Blair, Emma Bell,	<i>Blair Station, Pa.,</i>	English Sp.
Blair, Frank Oscar,	<i>Rockville, Ind.,</i>	Civil Eng.
Blair, Thomas Arthur,	<i>San Jacinto,</i>	Mathematics
Blair, William Leeper,	<i>San Jacinto,</i>	Economics
Blake, Elizabeth Hughes,	<i>Palo Alto</i>	German Sp.
Blake, William Horton,	<i>Palo Alto,</i>	Geology and Mining
Blake, Thomas Barnard,	<i>Palo Alto,</i>	Chemistry Sp.
Bliss, Philip Paul,	<i>Santa Cruz,</i>	Physiology
Blodget, Claude Raymond,	<i>Bakersfield,</i>	Economics
Blodget, Percy Langdon,	<i>Bakersfield,</i>	Mechan. Eng. Sp.
Blust, Hazel Juliet,	<i>Los Angeles,</i>	Latin
Boalt, Gilbert Denison,	<i>Palermo,</i>	Law
Bogle, Lawrence,	<i>Seattle, Wash.,</i>	Civil Eng.
Bolin, John Siegfried,	<i>San Jose,</i>	Education
Bonnell, Cornelia,	<i>Palo Alto,</i>	Physiology Sp.
Bonnell, John Kester,	<i>Palo Alto,</i>	English
Bonte, Harmon Storer,	<i>Sacramento,</i>	Civil Eng.
Bootes, Bertha Burnham,	<i>San Francisco,</i>	English
Borglum, Harriet Mothe,	<i>Omaha, Neb.,</i>	English
Borgquist, Alvin,	<i>Palo Alto,</i>	Psychology

B. S., Univ. of Utah, 1897.

Boulware, Alex. Stockton,	<i>Palo Alto,</i>	Latin
Boulware, Lucretia,	<i>Palo Alto,</i>	Latin
Boulware, Stella,	<i>Palo Alto,</i>	French
Bounds, Irvin J.,	<i>Santa Clara,</i>	Economics
Boyd, Ada Howard,	<i>Palo Alto,</i>	Mathematics
Boyle, Harry,	<i>San Rafael,</i>	Chemistry
Boyle, John Lawrence,	<i>Raton, N. M.,</i>	Civil Eng.
Boynton, Julia Salter,	<i>Los Angeles,</i>	English

Brackett, Foster Ely,	<i>Washington, D. C.,</i>	Latin
Bradford, Cora May,	<i>Palo Alto,</i>	Drawing
A. B., Stanford, 1902.		
Bradford, Nanella Lou-Vee,	<i>Palo Alto,</i>	Chemistry
Bradley, William Harold,	<i>San Diego,</i>	Mechan. Eng. Sp.
Bradshaw, Blanche,	<i>Whittier,</i>	German
Braly, Edith,	<i>Palo Alto,</i>	Botany
Braly, Norman B.,	<i>Palo Alto,</i>	Geology and Mining
Branner, Elsie,	<i>Stanford University,</i>	History
Braun, Carl Franklin,	<i>Cupertino,</i>	Mechanical Eng.
Bremner, Luella May,	<i>Santa Rosa,</i>	Zoology
Bremner, Olney Edwin,	<i>Santa Rosa,</i>	Zoology
Brew, Hal,	<i>Puyallup, Wash.,</i>	Civil Eng.
*Brickell, Howard,	<i>San Francisco,</i>	Law
A. B., Stanford, 1902.		
Briggs, Caroline Elizabeth,	<i>Sunnyvale,</i>	Mathematics
A. B., Stanford, 1899.		
Britton, George Edward,	<i>Lawrence,</i>	Latin
Britton, Lewis Henry,	<i>Lawrence,</i>	English
Brooks, Margaret Evelyn,	<i>Palo Alto,</i>	German Sp.
Brooks, Ruby Alice,	<i>San Jose,</i>	Latin
Brotherton, Theodore Willard,	<i>Los Angeles,</i>	Geology
Brown, Agnes Elizabeth,	<i>Palo Alto,</i>	English
Brown, Alice Mary,	<i>Florin,</i>	Zoology
Brown, Audrey Ruth,	<i>San Jose,</i>	Greek
Brown, Edna Jeraldine,	<i>Palo Alto,</i>	History
Brown, Estelle Mary,	<i>Campbell,</i>	History
Brown, Frederick Allen,	<i>Pasadena,</i>	Physiology
Brown, Howell Chambers,	<i>Pasadena,</i>	Romanic Lang.
Brown, Joseph Grant,	<i>Palo Alto,</i>	Physics
A. B., Stanford, 1901.		
Brown, Mabel Haughton,	<i>Stanford University,</i>	English
Brown, Martha Jane,	<i>Santa Cruz,</i>	History
Brown, Willard Morse,	<i>Pasadena,</i>	Chemistry
Brownlie, Charlette Wakerley,	<i>Vallejo,</i>	German
Brownlie, James William,	<i>Vallejo,</i>	Law
Brua, Elmer George,	<i>Rialto,</i>	Civil Eng.
Bruce, Charlotte Elizabeth,	<i>San Francisco,</i>	Latin
A. B., Stanford, 1903.		
Bruckman, Grace Hermanita,	<i>San Francisco,</i>	Physics

*Work completed summer, 1902.

Bryan, Barnabas,	<i>Anacostia, D. C.,</i>	Geol.-Mining
Bryant, Arthur Sandford,	<i>Santa Rosa,</i>	Mechanical Eng.
Bubb, Benjamin Clarence,	<i>Mountain View,</i>	Drawing
Bucher, Carroll Strickland,	<i>Mt. Carroll, Ill.,</i>	Law
Burcham, David,	<i>Palo Alto,</i>	Mathematics
Burcham, Emilie Henry,	<i>Palo Alto,</i>	Psychology
Burcham, John Samuel,	<i>Stanford University,</i>	Zoology

A. B., Stanford, 1902.

Burcham, Violet MacMaster,	<i>Palo Alto,</i>	English <i>Sp.</i>
Burge, Noel S.,	<i>Stockton,</i>	Civil Eng.
Burke, William Edmund,	<i>Stanford Univ.,</i>	Chem. Eng. <i>Sp.</i>
Burkhalter, Margaret,	<i>Los Angeles,</i>	History
Burnap, Christine Mary,	<i>Coronado,</i>	Chemistry
Burnham, Marie Sophrene,	<i>Los Angeles,</i>	English
Burr, Lewis G.,	<i>Palo Alto,</i>	Electrical Eng.
Burr, Walter Gordon,	<i>Monrovia,</i>	Latin
Bush, Harry Edward,	<i>Redding,</i>	Mining Eng.
Bushnell, Helen Warner,	<i>Los Angeles,</i>	Mathematics
Buss, Harriet Foote,	<i>Bakersfield,</i>	History
Butterfield, Hayden Gearhart,	<i>Cupertino,</i>	Electrical Eng.
Button, Burnell DeWitt,	<i>San Diego,</i>	Mechanical Eng.
Byrd, Jane Carroll,	<i>Crawfordsville, Ind.,</i>	English
Byrne, Leo Daniel,	<i>San Bernardino,</i>	Law
Cahoon, John Frederic,	<i>Canton, N. Y.,</i>	Economics <i>Sp.</i>
Caldwell, Andrew Arthur,	<i>San Jose,</i>	Law
Cameron, Crissie,	<i>Prosser, Utah,</i>	Drawing
Camp, Grace Cleone,	<i>Palo Alto,</i>	Zoology
Campbell, Donald Percy,	<i>Mayfield,</i>	Law
Campbell, Henry Avery,	<i>Sausalito,</i>	Civil Eng.

A. B., Stanford, 1903.

Campbell, Hugh W.,	<i>Stockton,</i>	Mechanical Eng.
Campbell, Jesse Eugene,	<i>Adin,</i>	Law
Campbell, William Howard,	<i>Watsonville,</i>	Physiology
Canniff, Edith Alice,	<i>Pasadena,</i>	Latin
Carlson, Anton Julius,	<i>Chicago, Ill.,</i>	Physiology

A. B., Augustana Coll., 1898, A. M., 1899; Ph. D., Stanford, 1903.

Carothers, Edward Dawson,	<i>Emlenton, Pa.,</i>	Law <i>Sp.</i>
Carpenter, Susan Wilshire,	<i>Los Angeles,</i>	English
Carr, Jesse Douglas,	<i>Salinas,</i>	Mechanical Eng. <i>Sp.</i>
Carter, Estella Pearl,	<i>Palo Alto,</i>	Drawing

Carter, Ross Stagg,	<i>San Diego,</i>	Physiology
Carter, William Douglas,	<i>Quincy, Ill.,</i>	Mechanical Eng.
Cary, Iva Lois,	<i>Palo Alto,</i>	English
Cary, Luella,	<i>Scio, Or.,</i>	English
Case, Paul Julian St. John,	<i>Emmetsburg, Ia.,</i>	Geol.-Mining

Ph. B., Iowa Coll., 1902.

Cavallaro, Dominick Clifton.	<i>San Jose,</i>	Mathematics
Chaddock, Edith Grace,	<i>Fresno,</i>	Drawing
Chambers, Genevieve,	<i>San Jose,</i>	Romanic Lang.
Chandler, Grace Lucinda,	<i>Santa Paula,</i>	English
Chandler, Howard Hiram,	<i>Selma,</i>	Geology and Mining
Chandler, Mary M.,	<i>San Francisco,</i>	History
Chandler, Winfred Buford,	<i>Baker City, Or.,</i>	Law
Chapin, Roy Huntly,	<i>Escondido,</i>	Chemistry
Chapman, Charles Everett,	<i>Ballard, Wash.,</i>	Civil Eng. Sp.
Chapman, Mildred Pitkin,	<i>Riverside,</i>	History
Chappel, Halbert William,	<i>Batavia, N. Y.,</i>	Law

A. B., Stanford, 1901.

Charlebois, Emma Eulalie,	<i>Ventura,</i>	History
Charles, Shirley Mansfield,	<i>Palo Alto,</i>	English
Cheadle, Albert Bernard,	<i>Ottumwa, Ia.,</i>	Economics
Chenery, John Gibson,	<i>Port Angeles, Wash.,</i>	Economics
Christy, Fred Chase,	<i>Phoenix, Ariz.,</i>	Geology-Mining
Church, Lenoir Campbell,	<i>San Francisco,</i>	Geology
Clack, George Sidney,	<i>Menlo Park,</i>	Geol. and Mining
Clark, Bessie La Mar,	<i>San Francisco,</i>	History Sp.
Clark, Charles Lester,	<i>Live Oak,</i>	Electrical Eng.
Clark, Craig Mathers,	<i>Palo Alto,</i>	Botany
Clark, George Herbert,	<i>Stockton,</i>	Civil Eng.
Clark, William Otterbein,	<i>Yale, Ill.,</i>	Geology and Mining

A. B., Union Christian Coll., 1899.

Clarke, Harry Carver,	<i>Fall River, Mass.,</i>	Physiol. Sp.
Clarke, Oliver Holman,	<i>Fall River, Mass.,</i>	Physiol. Sp.
Cleary, Harriett Andrews,	<i>San Diego,</i>	English

A. B., Stanford, 1903.

Cleary, Mary Bissell,	<i>San Diego,</i>	Latin
Clinton, Lynne Fox,	<i>Salt Lake City, Utah,</i>	Law
Cloud, Roy Walter Noble Ernest,	<i>Redwood City,</i>	History
Cochrane, Marie,	<i>San Bernardino,</i>	Latin
Cocks, Bertrand Richard,	<i>Palo Alto,</i>	Greek

Coe, Harrison Streeter,	<i>Palo Alto,</i>	Geology
A. B., Stanford, 1903.		
Coen, Thomas More,	<i>San Mateo,</i>	Economics
Coffey, Alexander Brainard,	<i>Seattle, Wash.,</i>	Education
Coffin, Robert Samuel,	<i>Santa Clara,</i>	English
Colberg, Henry John,	<i>Stockton,</i>	Mechanical Eng.
Colbert, John Hutsinpillar,	<i>Ft. Dodge, Ia.,</i>	English
Cole, William Russell,	<i>Des Moines, Ia.,</i>	English
Coleman, George Albert,	<i>Palo Alto,</i>	Zoology
Coleman, Jacob,	<i>Palo Alto,</i>	Economics
Collyer, Norman,	<i>Tacoma, Wash.,</i>	Civil Eng.
Colton, Warren Alfred,	<i>Vernal, Utah,</i>	Physiology Sp.
Comings, Jennie Alice,	<i>San Francisco,</i>	Chemistry
Connell, John Harden,	<i>Wellsburg, W. Va.,</i>	Law
A. B., West Virginia Univ., 1901.		
Cooley, Arthur Edward,	<i>Cloverdale,</i>	Law
Coolidge, Herbert Francis,	<i>Palo Alto,</i>	Economics Sp.
Coons, James Watt,	<i>Palo Alto,</i>	Mechanical Eng. Sp.
Cooper, Anna J.,	<i>San Jose,</i>	Physiology
Cooper, Edward Lome,	<i>Seattle, Wash.,</i>	Elect. Eng. Sp.
Cooper, John Titus,	<i>Los Angeles,</i>	Law
Cooper, Kenneth Farra,	<i>Palo Alto,</i>	Civil Eng.
Cooper, William Alpha,	<i>Palo Alto,</i>	German
A. B., Marietta Coll., 1892, A. M., 1897.		
Coover, John Edgar,	<i>Palo Alto,</i>	Philosophy
Copp, William Whipple,	<i>Los Angeles,</i>	Chemistry
Corbert, Anita Lawrence,	<i>Palo Alto,</i>	Economics
A. B., Stanford, 1896.		
Corbet, Mary	<i>Palo Alto,</i>	Romanic Lang.
Corbet, Sadie,	<i>Palo Alto,</i>	Zoology
Cortes, Charles Eliseo,	<i>Guadalajara, Mexico,</i>	Civ. Eng.
Cory, Mabel Ward,	<i>Santa Ana,</i>	Philosophy Sp.
Cothrin, Foye,	<i>Sacramento,</i>	Law
Couch, Edward Garfield,	<i>Palo Alto,</i>	Geol. and Mining Sp.
Coulter, Edith Margaret,	<i>Salinas,</i>	German
Courtright, Nellie Brooks,	<i>Aurora, Ill.,</i>	Latin
Coville, Alice Bertha,	<i>Mountain View,</i>	French
Cowan, John Francis,	<i>Los Angeles,</i>	Physiology
A. B., Stanford, 1902.		
Cowden, Dave Van Clief,	<i>San Jose,</i>	Law
Cowdery, Mary Belle,	<i>Pomona,</i>	German

Crabtree, David Montgomery,	<i>Palo Alto,</i>	Latin
A. B., Kentucky Univ., 1899.		
Cramer, Sophia,	<i>Palo Alto,</i>	German
Crandall, Berton Woodford,	<i>Palo Alto,</i>	Chemistry
Crandall, Esther,	<i>Palo Alto,</i>	Greek
Crandall, Helen La Baree,	<i>Oakland,</i>	English
Crandall, Roderic,	<i>Palo Alto,</i>	Geology and Mining
Crane, Arthur Garfield,	<i>Fallbrook,</i>	English
Crary, Charles Judson,	<i>Boone, Ia.,</i>	English
Crary, Clarence Stephen,	<i>Stanford University,</i>	Economics
Cravens, Mary Ruhama,	<i>Sacramento,</i>	Zoology
Crawford, Clarence Harrison,	<i>Union, Or.,</i>	Law
Crawford, William Elmer,	<i>Cupertino,</i>	Chemistry
Cressy, Calvin Joy,	<i>Modesto,</i>	Geology and Mining
Critchlow, Florence Marian Tabor,	<i>San Francisco,</i>	Eng. Philol.
A. B., Northwestern Univ., 1892; A. M., Stanford, 1903.		
Cromwell, George,	<i>Fallbrook,</i>	Civil Eng.
Cronyn, Thoreau,	<i>Stanford University,</i>	English
Crosiar, Annie Jane,	<i>Stanford University,</i>	English
Crossman, Walter Allen,	<i>San Jose,</i>	Chemistry
Crothers, Wesley Ellsworth,	<i>San Jose,</i>	Law
Crow, Benjamin Stewart,	<i>San Jose,</i>	Law
A. B., Stanford, 1901.		
Crowfoot, Ray Lee,	<i>Paso Robles,</i>	Civil Eng.
Cruzan, Harold Ide,	<i>San Francisco,</i>	Law
Cunha, Edward Anthony,	<i>Milpitas,</i>	Law
Cunning, Frank Ambrose,	<i>Hollister,</i>	Mechanical Eng.
A. B., Indiana Univ., 1899.		
Cunningham, Athan David,	<i>Anderson,</i>	Mathematics Sp.
Cunningham, Peter Bernard,	<i>Ukiah,</i>	Law
Curtis, Earl W.,	<i>Tancred,</i>	Chemistry Sp.
Curtis, Harry E.,	<i>Tancred,</i>	Law Sp.
Cushman, Freeman Hedge,	<i>Tacoma, Wash.,</i>	Mech. Eng. Sp.
Cutler, Georgia Frances,	<i>Palo Alto,</i>	English
Cutler, Leland Whitman,	<i>Palo Alto,</i>	English
Cutter, Lawrence Edminster,	<i>Mountain View,</i>	Mech. Eng. Sp.
Cutter, Mary Adeline,	<i>Palo Alto,</i>	Economics Sp.
Cutting, James Arthur,	<i>Palo Alto,</i>	English
Cutting, Theodore Abijah,	<i>Palo Alto,</i>	English
Daggett, Henry Austin,	<i>San Diego,</i>	Economics
Dake, Daisy Gertrude,	<i>Pasadena,</i>	German

Darby, Helen Louise,	<i>Morgan Park, Ill.,</i>	Physics
Darling, Ernest Wilfred,	<i>Stanford University,</i>	Physiology
Davenport, Nina Claire,	<i>San Jose,</i>	Drawing
Davidson, Cassie Aleda,	<i>San Diego,</i>	English
Davidson, John Pirnie,	<i>Los Angeles,</i>	Geology
Davis, Delos Darwin,	<i>Palo Alto,</i>	Botany
Davis, Louise Van Dant,	<i>Butte, Mont.,</i>	English
Davis, Reuben Waldo,	<i>Darwin, Tex.,</i>	Geol.-Min. Sp.
Davis, Sydney Leander,	<i>Stanford Univ.,</i>	Rom. Lang.
Dawson, Percy Beach,	<i>Palo Alto,</i>	Mechanical Eng. Sp.
Dawson, Ralph,	<i>Butte, Mont.,</i>	Chemistry
Deal, William Griffith,	<i>San Francisco,</i>	Law
Dearing, Harry Lummis,	<i>Santa Ana,</i>	Law Sp.
Dehy, James Gordon,	<i>Bishop,</i>	Civil Eng. Sp.
De Witt, Marcus Elmo,	<i>Tulare,</i>	English
Dey, Benjamin Clifford,	<i>Santa Cruz,</i>	Law
Dibble, Arthur McQueen,	<i>Portland, Or.,</i>	Law
Dickinson, Alice Lovejoy,	<i>Alameda,</i>	Physiology
Dille, Ione Candace,	<i>Cincinnati, O.,</i>	Latin
Dinwoody, Leroy G.,	<i>Salt Lake City, Ut.,</i>	Economics
Dittmar, Arthur Phillip,	<i>Redding,</i>	Geol. and Min. Sp.
Dittmar, Carl Frederic,	<i>Redding,</i>	Law Sp.
Doan, Frank Wilson,	<i>Palo Alto,</i>	Law Sp.
Doane, Edgar Willis,	<i>Palo Alto,</i>	Civil Eng.
B. S., Kansas State Agr. Coll., 1901.		
Doane, William Charles,	<i>Pasadena,</i>	Zoology
Dodd, Robert William,	<i>San Francisco,</i>	Chemistry
Doherty, Will Francis,	<i>Galveston, Tex.,</i>	Elec. Eng. Sp.
Dole, Alfred Rowell,	<i>Riverside,</i>	Geology
Dole, Norman Elliot,	<i>Riverside,</i>	Chemistry
Dole, Wilfred Heinrich,	<i>Riverside,</i>	Physiology
Donaldson, Joseph Everett,	<i>Hamilton, Mo.,</i>	History
Doran, Katharine May,	<i>Redlands,</i>	History
Dorsey, Florence Eugenia,	<i>San Francisco,</i>	Entomology
A. B., Stanford, 1899, A. M., 1902.		
Dougherty, Robert,	<i>San Francisco,</i>	Electrical Eng.
Douglass, Charles La Mott,	<i>Poolville, N. Y.,</i>	English Sp.
Downing, Helen,	<i>Los Angeles,</i>	German
Downing, Mary,	<i>Palo Alto,</i>	Romanic Lang.
Dowty, Ada May,	<i>San Francisco,</i>	English Sp.

Doyle, Frances Michal,	<i>Menlo Park.</i>	Physiology <i>Sp.</i>
D'Oyly, May Linnell,	<i>San Jose,</i>	English <i>Sp.</i>
Drake, Wilbur Arthur,	<i>Los Angeles,</i>	Latin
Drinkwater, Mary Lucy,	<i>Corona,</i>	Latin
Dudley, Ernest Griswold,	<i>Stanford University,</i>	Chem. <i>Sp.</i>
Duncan, Charles L.,	<i>Porterville,</i>	English
Duncan, Louise,	<i>Porterville,</i>	English
Dunlap, Anna Laura,	<i>Holland Patent, N. Y.,</i>	Latin
Dunn, Amy Louise,	<i>Eugene, Or.,</i>	Latin
Dunn, Estella Mae,	<i>Bloomington, Ill.,</i>	German <i>Sp.</i>
Dunn, Walter Francis,	<i>Duarte,</i>	Law
Dunne, James Leonard,	<i>Benton, Mont.,</i>	Civil Eng.
Duval, Ernest Hawley,	<i>Saticoy,</i>	History
Earle, Homer Price,	<i>Los Angeles,</i>	Romanic Lang.
Easterday, Mabel Claire,	<i>San Jose,</i>	Latin
Eaton, Clarence Burwell,	<i>San Jose,</i>	Mechanical Eng.
Eaton, Harold,	<i>Los Angeles,</i>	Civil Eng. <i>Sp.</i>
Eby, Clarissa,	<i>Oakland,</i>	English <i>Sp.</i>
Eddy, Ralph Adair,	<i>Palo Alto,</i>	Electrical Eng. <i>Sp.</i>
Edgerly, Edith Folsom,	<i>Garden Grove,</i>	History
Edson, Mark Samuel,	<i>Stowe, Vt.,</i>	Civil Eng. <i>Sp.</i>
Edwards, Carolyn Z.,	<i>San Jose,</i>	English
Edwards, Edith Viola,	<i>San Jose,</i>	Economics
Edwards, Gordon William,	<i>San Francisco,</i>	Electrical Eng.
Edwards, Hazel Florence,	<i>Los Angeles,</i>	English
Edwards, Paul Carroll,	<i>Indianapolis, Ind.,</i>	English
Edwards, William Watkin,	<i>San Jose,</i>	Law
Ellenwood, Frank Oakes,	<i>Palo Alto,</i>	Mechanical Eng.
Elliott, Charlotte,	<i>San Jose,</i>	English
Ellis, Annie Alexandra,	<i>Pacific Grove,</i>	Chemistry
Ellis, Clarence Edgar,	<i>San Francisco,</i>	Chemistry
Elmer, Adolph Daniel Edward,	<i>Palo Alto.</i>	Botany
B. S., Washington Agr. Coll., 1899.		
Elmore, Harry M.,	<i>Hinsdale, N. H.,</i>	Greek
Ely, Helen Heath,	<i>Palo Alto,</i>	Latin
Emerson, Ralph Damon,	<i>Stanford University,</i>	Chemistry
Estes, Fred Raymond,	<i>San Jose,</i>	Law
Evans, Jane Elizabeth,	<i>Anaconda, Mont.,</i>	Rom. Lang.
Evans, Margaret Alice,	<i>Butte Mont.,</i>	German
Evans, Milo Hart,	<i>Stanford University,</i>	Chemistry

Evans, Walter Hubert,	<i>Denver, Colo.,</i>	Elec. Eng.
Everett, Elizabeth Abby,	<i>Stanford University,</i>	Education
Everett, Ralph Waldo,	<i>Stanford University,</i>	History
Everhart, Albert Russell,	<i>Palo Alto,</i>	Law Sp.
Fairfield, Edith May,	<i>Dunkirk, Ind.,</i>	English
Falk, Laura Bell,	<i>Eureka,</i>	History
Faris, Margaret Summers,	<i>Sacramento,</i>	History
Farrar, Mercer Hayl,	<i>Tulare,</i>	Law
Favre, Eugene Barkley,	<i>Palo Alto,</i>	Law
Fay, Arline Roque,	<i>San Diego,</i>	History
Fay, James Archer,	<i>Anaheim,</i>	Geology,
Featherstone, Gertrude Drusilla,	<i>Palo Alto,</i>	Latin
Featherstone, Mary Elizabeth,	<i>Palo Alto,</i>	Spanish Sp.
Ferguson, Carl Augustus,	<i>San Bernardino,</i>	Elec. Eng.
Ferguson, Roy Noble,	<i>San Bernardino,</i>	Mining Eng.
Fernald, Reginald Goodwin,	<i>Santa Barbara,</i>	Law
Fields, Catherine Leota,	<i>Palo Alto,</i>	English
Fifield, Ethel May,	<i>San Francisco,</i>	English
Finney, Clara Eugenia,	<i>Modesto,</i>	Mathematics
Firebaugh, Charles Ludwig,	<i>Palo Alto,</i>	Law
Fisher, Walter Kenrick,	<i>Palo Alto,</i>	Zoology
A. B., Stanford, 1901.		
Fitch, Mary Edith,	<i>San Francisco,</i>	History Sp.
Fitting, Ralph Ulf,	<i>San Bernardino,</i>	Elec. Eng.
Fitzgerald, Charles Arthur Veach,	<i>Georgetown,</i>	Elec. Eng.
A. B., Santa Clara Coll., 1901.		
Fitzgerald, Ellen Winifred,	<i>Gilroy,</i>	Latin
Fitzgerald, Fred Finley,	<i>Clarion, Pa.,</i>	Geology and Min.
Fitzgerald, Katherine Gertrude,	<i>Gilroy,</i>	French
Flanders, Edward Aiken,	<i>Glencoe, Ill.,</i>	Economics
Fleming, Ralph Douglas,	<i>Sacramento,</i>	Economics Sp.
Fletcher, Arthur Ransford,	<i>Palo Alto,</i>	English
Flippen, Marion S.,	<i>Orange,</i>	Civil Eng. Sp.
Fogg, Edward,	<i>Tacoma, Wash.,</i>	History
Forbes, Walter Dale,	<i>Ogden, Utah,</i>	Chem. Eng. Sp.
Fosdick, Archibald Morris,	<i>Palo Alto,</i>	Education
A. B., Stanford, 1902.		
Fosdick, Bertha May,	<i>Palo Alto,</i>	Mathematics Sp.
Foss, John Harrison,	<i>Palo Alto,</i>	Civil Eng.
Foss, Martha Archibald,	<i>Palo Alto,</i>	Mathematics
Foster, Edith Annie,	<i>Ventura,</i>	History

Foster, Ethel Hilda,	<i>Palo Alto,</i>	German
Foster, John Moody,	<i>Palo Alto,</i>	Chemistry <i>Sp.</i>
Foster, Mable Gertrude,	<i>Palo Alto,</i>	Latin
Foster, Mary Christine,	<i>Coronado,</i>	History
Fowle, Carolyn Curtis,	<i>San Francisco,</i>	History
Fowler, Frederick Hall,	<i>Palo Alto,</i>	Civil Eng.
Fowler, Ruth,	<i>Santa Rosa,</i>	Mathematics
Fowler, William Henry Begbie,	<i>San Francisco,</i>	Economics, <i>Sp.</i>
Fox, William Stewart,	<i>Washington, D. C.,</i>	Chemistry
Foy, Florence,	<i>Los Angeles,</i>	French
Frederickson, Albion Fabian,	<i>Templeton,</i>	Electrical Eng.
Free, Arthur Monroe,	<i>Mountain View,</i>	Law
A. B., Stanford, 1901.		
Freeman, Anthony C.,	<i>Chicago, Ill.,</i>	Physiology
Freeman, Eldora,	<i>Cupertino,</i>	Latin
French, Rebecca Beatrice,	<i>San Jose,</i>	History
Frink, Lester Daniel,	<i>Mountain View,</i>	Geol. and Min.
Frisselle, Edward Irving,	<i>Fresno,</i>	Physiology
Frisselle, Ralph Dennison,	<i>Fresno,</i>	Economics
Frisselle, Samuel Parker,	<i>Fresno,</i>	Economics
*Frost, Martha Mahalah,	<i>San Diego,</i>	German
A. B., Stanford, 1902.		
Fujii, Juroku,	<i>Palo Alto,</i>	Chemistry
Fukukita, Yasunosuke,	<i>Palo Alto,</i>	English
Fuller, Lewis Everett,	<i>San Mateo,</i>	Geology
Fuller, Raymond August,	<i>Palo Alto,</i>	Geology and Mining
Fullaway, David Timmins,	<i>Palo Alto,</i>	Physiology <i>Sp.</i>
Fulton, Charles Guthrie,	<i>Palo Alto,</i>	Electrical Eng.
Funke, Philip K.,	<i>Denver, Colo.,</i>	Law
Gaddis, Fletcher Eugene Allen,	<i>Stanford University,</i>	History
Gaither, Robert Hughes,	<i>New York, N. Y.,</i>	Mech. Eng. <i>Sp.</i>
Galbraith, William James, Jr.,	<i>Honolulu, H. I.,</i>	Law <i>Sp.</i>
Gamble, George Edwin,	<i>Palo Alto,</i>	Chemistry
Gamble, James Lander,	<i>Palo Alto,</i>	Physiology
Garfias, Valentine Richard,	<i>Mexico City, Mex.,</i>	Civil Eng.
Garibaldi, Kathrynne Elvira,	<i>Merced,</i>	Latin
A. B., Stanford, 1903.		
Garlinghouse, Lois Edna,	<i>Modesto,</i>	Latin
Garratt, Graham Leslie,	<i>Jhansi, India,</i>	Elec. Eng.
Gavagan, Marie Indianola,	<i>Los Angeles,</i>	Spanish

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Gay, Harold Sinclair,	<i>Redlands,</i>	Geology
Gibbons, Oscar,	<i>Paso Robles,</i>	Law
Gibson, Cora Helen,	<i>Lakeport,</i>	English
Gibson, Harry Guy,	<i>Palo Alto,</i>	Law Sp.
Gilbert, Ruth Hughes,	<i>Stanford University,</i>	Chemistry
Gildersleeve, Joseph Burt,	<i>Palo Alto,</i>	Latin
Giles, James Sweeny,	<i>Oakland,</i>	Law
Giles, Mabel F.,	<i>San Jose,</i>	Botany
B. L., Smith Coll., 1896.		
Gilmore, Sadie Lois,	<i>San Jose,</i>	Botany
Giorgio, Rocco,	<i>San Jose,</i>	Spanish
J. U. D., Royal Univ., Rome, 1897.		
Gittings, Charles,	<i>Pueblo, Colo.,</i>	Mech. Eng. Sp.
Glasby, Lillian A.,	<i>Ocean Park,</i>	Latin Sp.
Gleim, Edgar Miller,	<i>Portland, Or.,</i>	Geol. and Mining
Goddard, Charles Baldwin,	<i>Conneaut, Ohio,</i>	English
Gonsalves, Louis,	<i>Mendocino,</i>	Law
Gordon, Alfred W.,	<i>Pasadena,</i>	Mechanical Eng.
Gordon, John Turbenville, Jr.,	<i>Azusa,</i>	Law
Gossett, Evangeline Singleton,	<i>Palo Alto,</i>	English
Goudy, Franklin Burris,	<i>Denver, Colo.,</i>	Geol. and Mining
Grace, Florence Mary,	<i>Rivera,</i>	Mathematics
Graham, Nina, Jean,	<i>Eureka,</i>	English
Grant, Maud Waterhouse,	<i>San Francisco,</i>	Law Sp.
Grau, Miriano Stedman,	<i>San Francisco,</i>	Physiology
Grau, Otto Karl,	<i>Sacramento,</i>	Electrical Eng.
Graves, Ethel Winona,	<i>Pasadena,</i>	Chemistry
A. B., Stanford, 1903.		
Graves, Joseph Hiram,	<i>San Jose,</i>	Philosophy
Gray, Thomas Starr,	<i>Oakdale,</i>	Law
A. B., Stanford, 1900.		
Green, Lucius Payton,	<i>Mountain View,</i>	Law
Greenleaf, Charles Hunt,	<i>Palo Alto,</i>	Romanic Lang.
A. B., Stanford, 1898.		
Gregg, Mary Elizabeth,	<i>Redding,</i>	English
Gregg, Ruth Bailey,	<i>Palo Alto,</i>	Mathematics
Greyson, Jessie Mary,	<i>Claremont,</i>	English
B. L., Pomona Coll., 1902.		
Grider, Noah Centennial,	<i>Oakdale,</i>	Chemistry
Gridley, Kate Louise,	<i>Gardena,</i>	Latin
Griffin, Allan Tristram,	<i>San Francisco,</i>	Geol. and Min.

Grigsby, Harry C.,	<i>Tulare,</i>	Geology
Grinnell, Fordyce, Jr.,	<i>Pasadena,</i>	Zoology
Grinnell, Joseph,	<i>Palo Alto,</i>	Zoology

A. B., Throop Polytechnic Inst., 1897; A. M., Stanford, 1901.

Grow, Bernard Lyle,	<i>Fullerton,</i>	Electrical Eng. Sp.
Guidery, Myrtle,	<i>Oroville,</i>	Latin
Guild, Almira Hall,	<i>Palo Alto,</i>	English Sp.
Guild, Bertha,	<i>Palo Alto,</i>	Physiology Sp.
Gulick, Ray Alexander,	<i>Los Angeles,</i>	Electrical Eng.
Gundrum, Frederick Fretageot,	<i>Riverside,</i>	Physiology
Gussefeld, Alice,	<i>San Jose,</i>	German Sp.
Guthrie, William Smith,	<i>Palo Alto,</i>	Electrical Eng.
Guyer, Cloyd George,	<i>Altadena,</i>	Geology and Mining
Hadley, Roy Overman,	<i>Whatcom, Wash.,</i>	English
Hagmayer, Emilie Catherine,	<i>Cloverdale,</i>	German

A. B., Stanford, 1902.

Hale, Alice Staniford,	<i>Redlands,</i>	History
Hale, Edyth Mae,	<i>Salt Lake City, Utah,</i>	English
Haley, Percis Coons,	<i>Palo Alto,</i>	Education Sp.
Hall, Anna Gertrude,	<i>Santa Clara,</i>	English
Hall, Bessie D. Lena,	<i>Spokane, Wqsh.,</i>	German Sp.
Hall, Ethel Blanche,	<i>Sacramento,</i>	French
Hall, Harold,	<i>San Francisco.</i>	Mech. Eng.
Hall, Harry Morell,	<i>San Francisco,</i>	Law
Hall, Hubert Harry,	<i>San Jose,</i>	Civil Eng.
Halley, Albert Smith,	<i>Rapid City, S. D.,</i>	Geol.-Mining
Halsey, Edna Geraldine,	<i>Santa Cruz,</i>	Latin
Halsey, Henry Allen,	<i>Phoenix, Ariz.,</i>	Physiology Sp.
Hamilton, Henry Liberty,	<i>Palo Alto,</i>	Geology
Hamilton, Thomas,	<i>San Diego,</i>	Economics

A. B., Stanford, 1903.

Hamilton, Walter Raleigh,	<i>Palo Alto,</i>	Geology and Mining
Hammond, Leonard Coombs,	<i>San Francisco,</i>	Economics
Hampson, Alfred Aubert,	<i>Washington, D. C.,</i>	Law
Hampson, Joseph Hale,	<i>Washington, D. C.,</i>	Chemistry
Hampton, Chilton,	<i>Palo Alto,</i>	Civil Eng.
Hanna, Elma Gertrude,	<i>Centralia, Kan.,</i>	German
Hannum, Claude Elliott,	<i>Denver, Colo.,</i>	Elec. Eng.
Hanson, James William, Jr.,	<i>Alameda,</i>	Electrical Eng.
Hardison, Augusta,	<i>Santa Paula,</i>	English
Hardwick, Andrew Boyd,	<i>Nezperce, Idaho,</i>	Geol., Mining

Hardwick, William Noah,	<i>Nezperce, Idaho,</i>	Law
Hargrave, Charles Le Roy,	<i>Mendocino,</i>	Geol. and Mining
Harkins, Edward Castelar,	<i>Menlo Park,</i>	Mathematics
Harkins, Mary Santa Barbara,	<i>Menlo Park.</i>	French

A. B., Stanford, 1902.

Harlan, Orren Arthur,	<i>San Jose,</i>	Geology <i>Sp.</i>
Harper, Paul Coates,	<i>Seattle, Wash.,</i>	Geology
Harrenstein, Frances Cornelia,	<i>San Jose,</i>	German
Harrington, John Peabody,	<i>Santa Barbara,</i>	Greek
Harrington, Kate Theresa,	<i>San Bernardino,</i>	English
Harris, Abe Perry,	<i>San Jose,</i>	Law
Harris, Blanche,	<i>San Francisco,</i>	English
Harris, Kathryn Elizabeth,	<i>San Bernardino,</i>	Botany
Harris, Mabel Lena,	<i>Merced,</i>	Latin
Harrison, Hurst Perbasco,	<i>Walton, Ind.,</i>	Law <i>Sp.</i>
Hart, Ethel Terry,	<i>Redlands,</i>	Romanic Lang.
Hart, Ida,	<i>Merced,</i>	Latin
Hartnell, Ella Rachel,	<i>Salinas,</i>	English
Harwick, Alexander Aiken,	<i>Poplar Bluff, Mo.,</i>	Economics
Haselwood, Fred Willis,	<i>Palo Alto.</i>	Civil Eng.

B. S., Kansas State Agr. Coll., 1901.

Haslacher, Beatrice Clare,	<i>Oakdale,</i>	History
Hasman, George,	<i>San Jose,</i>	English <i>Sp.</i>
Hatch, Everett Hamilton,	<i>Napa,</i>	Civil Eng.
Hathaway, Frank Bacon,	<i>Denison, Tex.,</i>	Electrical Eng.
Hathway, Anita Monarch,	<i>San Luis Obispo,</i>	History
Hatton, Charles Walter,	<i>Napa,</i>	Law <i>Sp.</i>
Haub, Hattie Dora Frances,	<i>Santa Rosa.</i>	Physiology
Hauverman, Cornelius Duane,	<i>Banning,</i>	Chemistry
Haver, Samuel Caldwell, Jr.,	<i>Redlands,</i>	Geology and Mining
Hawkins, Horatio Bates,	<i>San Francisco.</i>	History
Hawley, Lee Carroll,	<i>Santa Paula.</i>	Education
Hayden, Sara Davis,	<i>Palo Alto.</i>	French
Hayden, Thomas Edward,	<i>San Diego,</i>	Law

A. B., Hamilton Coll., 1891, A. M., 1893.

Hayes, Alice Sedonia,	<i>Denver, Colo.,</i>	German
Hayes, Thomas Alonzo,	<i>Ashland, Or.,</i>	History
Haynes, Diantha May,	<i>Compton,</i>	Physiology

A. B., Throop Polytechnic Inst., 1896.

Hayward, Emma,	<i>San Carlos.</i>	Economics
Hayward, James Joel,	<i>San Jose,</i>	Chemistry

Hayward, Jeannette May,	<i>Santa Barbara,</i>	Latin
Heinly, Webster Guy,	<i>Creston, Ia.,</i>	Law
B. S., Knox Coll., 1901.		
Hellwig, Herbert Frederick,	<i>San Francisco,</i>	Geol. and Min.
Helwig, Lester Henry,	<i>North Bloomfield,</i>	Mining Eng.
Helwig, Walter Lee,	<i>El Modena,</i>	Mech. Eng. Sp.
Henrich, Ethel Walker,	<i>Columbus, Neb.,</i>	Drawing
Hendrick, Mary Emma,	<i>Los Angeles,</i>	English
Henley, Arthur Sidney,	<i>Palo Alto,</i>	Geology and Mining
Henley, Edward Vernon,	<i>Mayfield,</i>	Law
Henley, Lloyd A.,	<i>Round Valley,</i>	Electrical Eng.
Henley, William Wheeler,	<i>Mayfield,</i>	Mechanical Eng.
Henriksen, Martin Emil,	<i>San Francisco,</i>	Zoology
Henry, Addis Victor,	<i>White Sulphur Springs, Mont.,</i>	Geology
Henry, Gertrude May,	<i>Chamberlain, S. D.,</i>	English
Hensey, William Henry,	<i>San Francisco,</i>	English
Henzel, Bertha,	<i>San Francisco,</i>	German
Henzel, Ida Bell,	<i>San Francisco,</i>	Latin
Herold, Stanley Carrollton,	<i>San Jose,</i>	Electrical Eng.
Herre, Albert William Christian Theodore,	<i>Mayfield,</i>	Botany
Herron, George Merrick,	<i>Napa,</i>	Civil Eng.
Herron, Josephine,	<i>Stanford University,</i>	Drawing
Hess, Frank L.,	<i>Stanford University,</i>	Geol.-Min.
Hetherington, Hazel Camilla,	<i>Palo Alto,</i>	Chemistry
Hewlett, George,	<i>San Francisco,</i>	Law
Hews, Jeannette Elizabeth,	<i>Rome, N. Y.,</i>	French
Heywood, Florence,	<i>Palo Alto,</i>	English
A. B., Stanford, 1902.		
Higgins, Margaret May,	<i>Astoria, Or.,</i>	English
Higgins, Ruie,	<i>Palo Alto,</i>	Romanic Lang.
Higley, Rose Miriam,	<i>Pasadena,</i>	Zoology
Hill, Bessie Florence,	<i>Portland, Or.,</i>	German
Hill, Edith Abigail,	<i>Redlands,</i>	German
Hirayama, Yasogoro,	<i>Tokyo, Japan,</i>	Entomology
Imperial Agr. Coll., Japan.		
Hitt, Barbara Genery,	<i>Los Angeles,</i>	English Sp.
Hodge, George Ashmun,	<i>San Diego,</i>	Electrical Eng.
Hodge, Mary Ashmun,	<i>San Diego,</i>	Physiology
Hohl, Leonard Louis,	<i>Oroville,</i>	Civil Eng.
Holbrook, Louise A.,	<i>Manchester,</i>	History
Holloway, Francis Lee,	<i>Palo Alto,</i>	Civil Eng.

Holly, Jesse Blaine,	<i>Dixon,</i>	Civil Eng.
Holly, Theodora H.,	<i>Palo Alto,</i>	Drawing Sp.
Holman, Edna Alice,	<i>San Antonio Tex.,</i>	English Sp.
Holman, Fred Sanderson,	<i>Willits,</i>	English
Holman, Ida Burnam,	<i>San Antonio Tex.,</i>	English Sp.
Holman, John Daniel,	<i>Fayetteville, Tenn.,</i>	Civil Eng.
Holmquist, Hjalmar Edwin,	<i>Redwood City,</i>	Law
Holt, Grace,	<i>San Jose</i>	English
Holway, Mary Gordon,	<i>San Jose,</i>	English
Holway, Ruliff Stephen,	<i>San Jose,</i>	Geology
Hood, Frederick Donald,	<i>Palo Alto,</i>	Mechanical Eng.
A. B., Stanford, 1903.		
Hooper, Arthur Willard,	<i>San Francisco,</i>	Economics
Hoops, Walter Williams,	<i>Chicago, Ill.,</i>	Mechanical Eng.
Hoover, Grace Amelia,	<i>Palo Alto,</i>	Drawing Sp.
Hoover, Harry Elmer,	<i>Mt. Carroll, Ill.,</i>	English
Hoover, Theodore Jesse,	<i>Palo Alto,</i>	Geology
A. B., Stanford, 1901.		
Hope, Edward William,	<i>Shaftsbury, England,</i>	Greek
A. B., Univ. of Pennsylvania, 1902.		
Hopkins, John Hearn,	<i>San Bernardino,</i>	English
Hopper, Charles Bates,	<i>Los Angeles,</i>	Law
Hopper, Leona May,	<i>Palo Alto,</i>	English
Hopper, Maximilian Duff,	<i>Del Ray,</i>	Physics
A. B., Stanford, 1903.		
Horn, Pearl Myrtle,	<i>Bakersfield,</i>	Mathematics
Horowitz, Elmor Eugene,	<i>San Bernardino,</i>	Mining Eng.
Horr, Marrion Augusta,	<i>Santa Clara,</i>	History
Hoskins, Grace Granville,	<i>Palo Alto,</i>	French
Hough, Clarence D.,	<i>San Jose,</i>	Mathematics
Howard, Blanche Louise,	<i>Chicago, Ill.,</i>	English
Howard, Delle,	<i>Cloverdale,</i>	History
A. B., Stanford, 1903.		
Howard, Everard Ray,	<i>Los Angeles,</i>	Law Sp.
Howard, Herbert C.,	<i>Los Angeles,</i>	Civil Eng.
Howe, Reuben Fenton,	<i>Stanford University,</i>	Latin
Howes, Lyman Joseph,	<i>Los Angeles,</i>	English
Hubbard, Horace Clarence,	<i>Los Angeles,</i>	History Sp.
Hudson, Robert Allan,	<i>Berryessa,</i>	Mechanical Eng.
Hudson, Robert Spencer,	<i>Tacoma, Wn.,</i>	Economics
Hughes, Robert James,	<i>Merced,</i>	Electrical Eng.

Hughes, W. Arthur,	<i>Rewey, Wis.,</i>	Mechanical Eng.
Hull, Angus Clifton,	<i>Palo Alto,</i>	Greek
Hummel Redolpho Braun,	<i>Bakersfield,</i>	English
Hunter, Thomas Benton, Jr.,	<i>Stanford University,</i>	Civil Eng.
Hurlbut, Harold Hunter,	<i>Lewiston, Idaho,</i>	Economics
Hurlbut, William Whitehead,	<i>Berkeley,</i>	Geology
Huskey, H. Walter,	<i>Port Arthur, Tex.,</i>	Law
Hyatt, Inez,	<i>Riverside,</i>	Mathematics
Hyatt, Shirley,	<i>Riverside,</i>	Physics
Hyde, Arthur Edward,	<i>Philadelphia, Pa.,</i>	Economics
Hyde, Clarence Elmer,	<i>Cupertino,</i>	Physiology
Hyde, Lillian Seraphine.	<i>Palo Alto,</i>	History

A. B., Stanford, 1903.

Hyde, Mark Powell,	<i>Grand Rapids, Mich.,</i>	Elec. Eng.
Hyde, Otis Edwin,	<i>Cupertino,</i>	Drawing
Ibs, Ella,	<i>San Diego,</i>	Physiology
Iijima, Eitaro,	<i>Stanford University,</i>	Geology
Ingalls, Clayton E.,	<i>San Jose,</i>	Electrical Eng.
Irish, John Peck, Jr.,	<i>Oakland,</i>	Economics
Iriya, Matthew Etsutaro,	<i>Stanford University,</i>	Economics
Ishizawa, Kyugoro,	<i>San Francisco,</i>	Economics
Iverson, Ida Christine,	<i>Riverside,</i>	Physiology Sp.
Izumi, Akira,	<i>Hokkaido, Japan,</i>	Economics
Jack, Harry McGavran,	<i>Los Angeles,</i>	Geology
Jackson, Florence Rees,	<i>Villisca, Ia.,</i>	History
Jacobi, Marie,	<i>Pasadena,</i>	German

Universities of Berlin and Leipzig.

Jacobs, George Clarence,	<i>Merced,</i>	Civil Eng.
Jacobson, Pauline,	<i>Palo Alto,</i>	Psychology
James, Carlton Cheney,	<i>Los Angeles,</i>	Chemistry
James, Elias Olan,	<i>Mansfield, Ill.,</i>	English

A. B., Union Christian Coll., 1899; A. B., Stanford, 1902.

Jarnick, Joseph,	<i>Almond, Wis.,</i>	Latin
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A. B., Stanford, 1900, A. M., 1901.

Jeffers, Delphus Leaton,	<i>Tuscola, Ill.,</i>	Education
Jeffers, Granville Bond,	<i>Palo Alto,</i>	Education
Jenness, Beulah Steele,	<i>Palo Alto,</i>	German
Jennings, Robert,	<i>Los Angeles,</i>	Chemistry
Jensen, Peter Joseph,	<i>Palo Alto,</i>	Education
Jewett, Stanley Guion,	<i>Marysville,</i>	Civil Eng.

Johnson, Henry Roland,	<i>Stanford University,</i>	Geology
Johnson, Jennet,	<i>Redlands,</i>	English
Johnson, Mae Louise,	<i>Los Angeles,</i>	Latin
Johnston, John Leslie,	<i>Redwood City,</i>	Law
Joiner, Alvin, Jr.,	<i>Polo, Ill.,</i>	Chemistry
Jollyman, Alice,	<i>Cupertino,</i>	Spanish
Jollyman, Josiah Pickard,	<i>Cupertino,</i>	Electrical Eng.
Jones, Augustine,	<i>College Park,</i>	Philosophy
Jones, Bertha Emma,	<i>Los Angeles,</i>	English
Jones, Edgar Axton,	<i>Eureka,</i>	Law
Jones, Guy Pierpont,	<i>Palo Alto,</i>	English
Jones, Herbert Coffin,	<i>College Park,</i>	Law
A. B., Stanford, 1902.		
Jones, Warren Worth,	<i>Mayfield,</i>	Mathematics
B. S., Purdue Univ., 1896.		
Jordan, Edith Monica,	<i>Stanford University,</i>	History
A. B., Stanford, 1897; A. M., Cornell University, 1901.		
Jordan, Elmer Eaton,	<i>Napa,</i>	Geology and Mining
Jordan, Harold Bowen,	<i>Stanford Univ.,</i>	Geol. and Min.
Jordan, Samuel Tilden,	<i>Redlands,</i>	Law
Jordan, William,	<i>Philadelphia, Pa.,</i>	Mech. Eng. Sp.
Josephson, Julien,	<i>San Francisco,</i>	Law
Kaiser, Joseph Jacob,	<i>Mayfield,</i>	Geol. and Mining Sp.
Kalenborn, Arion Siegfried,	<i>Tacoma, Wash.,</i>	Electrical Eng.
A. B., Stanford, 1903.		
Kanada, Jim	<i>Palo Alto,</i>	Philosophy
Kato, Iwakichi,	<i>Oyama, Japan,</i>	Economics
Kawai, Taiyi,	<i>San Francisco,</i>	Economics Sp.
Kehrlein, Emil Valentine, Jr.,	<i>San Francisco,</i>	Economics
Kehrlein, Oliver Du Frésne,	<i>San Francisco,</i>	Physiology
Keiser, Emelie Caroline,	<i>San Jose,</i>	Physiology
Keith, Royden James,	<i>Chicago, Ill.,</i>	Law
Kelly, Henry Clay,	<i>San Jose,</i>	Law
Kelly, Virginia Mabel,	<i>Palo Alto,</i>	Physiology
Keniston, Lucia Nichols,	<i>Stockton,</i>	Mathematics
Kennedy, Karl Forsythe,	<i>San Jose,</i>	Law
Kent, Ava Ethel,	<i>Pacific Grove,</i>	Physiology
Kerns, Blaine Lester,	<i>Lewiston, Idaho,</i>	Elec. Eng. Sp.
Kerr, Frances Lois,	<i>Glendora,</i>	English
Kimball, Alice Windsor,	<i>Stanford University,</i>	English
Kimball, Elsie,	<i>Menlo Park,</i>	German

Kimball, Florence Mabel,	<i>San Mateo,</i>	History
A. B., Univ. of California, 1902.		
Kimball, Letizia Moulton,	<i>Eureka,</i>	History
Kimball, Rufus Hatch,	<i>Palo Alto,</i>	Law
Kimball, Ruth Laird,	<i>Stanford University,</i>	English
Kimble, May G.,	<i>Los Angeles,</i>	Chemistry
Kimble, Ruby,	<i>Los Angeles,</i>	History
King, Frances Schulze,	<i>Banning,</i>	English
King, Marguerite Stuart,	<i>Banning,</i>	English
King, Ralph Philip,	<i>Greensprings, Ohio,</i>	Geol.-Min.
Kinley, Fielden,	<i>Santa Rosa,</i>	Electrical Eng.
Kip, Kathryn Romer,	<i>San Francisco,</i>	English
Kitching, Frank A.,	<i>Redlands,</i>	Law
Klaine, Marie Ludie,	<i>Santa Clara,</i>	German
Klamt, Augustus Joseph,	<i>Stanford University,</i>	Geology
Klein, Charles Augustus,	<i>Stanford Univ.,</i>	Elec. Eng. Sp.
Knapp, Gertrude,	<i>Palo Alto,</i>	Zoology
Knapp, James Edmund,	<i>Palo Alto,</i>	Chemistry
Knepper, Earl H.,	<i>Los Angeles,</i>	Geology
Knight, Robert Bruce,	<i>Alameda,</i>	Law
Knowles, Antoinette,	<i>Santa Clara,</i>	History
Koerber, Lillie Louise,	<i>San Jose,</i>	German
A. B. Stanford, 1903.		
Kooser, Emma Lena,	<i>San Jose,</i>	English
Kraft, Augusta Chita,	<i>San Diego,</i>	German
Kuhn, Harold Phillip,	<i>Kansas City, Mo.,</i>	Physiology
Kuma, Toshi-yasu,	<i>Stanford University,</i>	Education
Kuwabara, Sakujiro,	<i>San Francisco,</i>	Law
Laird, Anna Lea,	<i>Parlier,</i>	English
Lake, Eric J.,	<i>Colorado Springs, Colo.,</i>	Law
Lamb, Ada Julia,	<i>Berkeley,</i>	History
Lamb, Edwin Gifford,	<i>Los Gatos,</i>	Greek
Lamborn, Bertha Taylor,	<i>Redlands,</i>	Greek
Lamson, Helen,	<i>Portland, Or.,</i>	English
Lanagan, William Henry,	<i>Denver, Colo.,</i>	Geol. and Min.
Lane, Fulton,	<i>Seattle, Wash.,</i>	Economics
Lanius, Helen,	<i>Louisville, Ky.,</i>	English
Larkins, Zoe Portie,	<i>Visalia,</i>	English
Lathrop, Clara M.,	<i>Worcester, Mass.,</i>	Drawing
Lauer, Ada Lucile,	<i>Winfield, Ia.,</i>	German

Catalogue of Students

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Lauler, Charles Edward,	<i>Elsinore,</i>	Economics
Lawry, George Vance,	<i>Redding,</i>	Law Sp.
Laws, Henry,	<i>Palo Alto,</i>	Mathematics
C. E., Univ. of Cincinnati, 1895.		
Ledyard, Benjamin Cory,	<i>San Jose,</i>	Physiology
*Lee, André Edward,	<i>San Francisco,</i>	Physiology
A. B., Stanford, 1902.		
Lee, Annie,	<i>San Jose,</i>	Latin
Lee, Howard Shields,	<i>Denver, Colo.,</i>	Mechanical Eng.
Lemons, Effie,	<i>Palo Alto,</i>	English Phil.
A. B., Indiana Univ., 1889.		
Leonard, Edward Michael,	<i>Aptos,</i>	Law
A. B., Santa Clara Coll., 1900; A. B., Stanford, 1903.		
Leonard, Joseph Flint,	<i>San Jose,</i>	Electrical Eng.
Leonard, Maud Bernice,	<i>Palo Alto,</i>	German
Lessey, Beatrice,	<i>Berkeley,</i>	French
Lett, Andrew Hilliard,	<i>Riverside,</i>	Geology
Levis, Reta Laura,	<i>Visalia,</i>	German
Levi, Edmond L.,	<i>San Mateo,</i>	Geology and Min.
Levy, Leon Gambetta,	<i>San Francisco,</i>	German
Lewers, Ellen Rosa,	<i>Franktown, Nev.,</i>	Botany
A. B., Univ. of Nevada, 1898.		
Lewis, Azro Nathaniel, Jr.,	<i>Alameda,</i>	Physiology
Lewis, De Lancey,	<i>San Jose,</i>	Law
Lewis, Elizabeth May,	<i>Hastings, Minn.,</i>	English
Lewis, Howard Milton,	<i>Palo Alto,</i>	Law
Lewis, Melvin Sowles,	<i>Colfax, Wash.,</i>	Economics
Lewis, Olive Mae,	<i>Fargo, N. D.,</i>	English
Lewis, Robert Strong,	<i>Palo Alto,</i>	Geol. and Mining
Libben, Thomas,	<i>Chicago, Ill.,</i>	History
Lidders, Alexander Henry,	<i>Palo Alto,</i>	Electrical Eng. Sp.
Liddle, Carrie Walker,	<i>Palo Alto,</i>	Psychology
Litt, Harry James,	<i>Portland, Or.,</i>	Mining Eng.
Little, Malcolm,	<i>Stanford Univ.,</i>	English Sp.
Lloyd, Edith L.,	<i>Ben Lomond,</i>	English
A. B. Stanford, 1903.		
*Lockey, Richard, Jr.,	<i>Palo Alto,</i>	Law
A. B., Stanford, 1902.		
Lodge, Elizabeth Leona,	<i>Craftonville,</i>	German
Loeser, Katherine Foster,	<i>Stanford Univ.,</i>	Chemistry Sp.

*Work completed summer, 1902.

Long, Royce Reed,	<i>Stanford Univ.,</i>	Physiology <i>Sp.</i>
Long, Wesley Robertson,	<i>Boston, Mass.,</i>	Romanic Lang.
A. B., Boston Univ., 1902.		
Lord, Charlotte Mable,	<i>Palo Alto,</i>	History
A. B., Stanford, 1902.		
Lord, Wilma Grace,	<i>Palo Alto,</i>	Zoology
Losse, Austin Nichols,	<i>San Jose,</i>	Economics <i>Sp.</i>
Lousley, Oswald Swinney,	<i>Santa Barbara,</i>	Physiology
Lovell, Hugh Farley,	<i>Campbell,</i>	Mechanical Eng.
Lowe, Eleanor Forsyth,	<i>San Jose,</i>	History
Lowenthal, William Baum,	<i>Livermore,</i>	Law
Lübbe, William Theodore Huston,	<i>Victoria, B. C.,</i>	Civil Eng.
Lucas, Lee Foreman,	<i>Santa Maria,</i>	Physiology
Luers, Marie Magdalene,	<i>San Jose,</i>	German
Lull, George, Jr.,	<i>Cambria,</i>	Law
Lullman, Rebecca Christiana,	<i>Palo Alto,</i>	English
Lullman, Regina Rebecca,	<i>Palo Alto,</i>	German
de Luna, Mercedes Maria,	<i>Los Angeles</i>	French <i>Sp.</i>
Lunt, James Chase,	<i>San Francisco,</i>	Economics
Lutgerding, George H.,	<i>Phoenix, Ariz.,</i>	Law
Lutz, Ralph Haswell,	<i>Port Angeles, Wash.,</i>	History
Lyman, Chester Laidlaw,	<i>Butte, Mont.,</i>	Law
Lyman, Edward Dean,	<i>Reno, Nev.,</i>	History
Lyman, George Dunlap,	<i>Reno, Nev.,</i>	Physiology
Lyons, Louis Spitz,	<i>San Francisco,</i>	Economics
McAllister, Stella,	<i>Riverside,</i>	History
McCaslin, Harvey,	<i>Palo Alto,</i>	Law
B. S., Kansas State Agr. Coll., 1901.		
McCaughern, John Casey,	<i>Stanford University,</i>	Economics
McChesney, Horace B.,	<i>Denver, Colo.,</i>	Elec. Eng. <i>Sp.</i>
McClellan, Jessie Eugenia,	<i>Palo Alto,</i>	English
McClellan, Ross St. John,	<i>Los Angeles,</i>	Electrical Eng.
McClelland, George Fraser,	<i>Palo Alto,</i>	Mechanical Eng.
McComish, Charles Davis,	<i>Stanford University,</i>	English
McComish, Ralph Clinton,	<i>Stanford University,</i>	Law
McCormick, Manson Fielding,	<i>Fresno,</i>	Law
A. B., Stanford, 1902.		
McCracken, Mary Isabel,	<i>Oakland,</i>	Physiology
McCroskey, Edith Irene,	<i>Hollister,</i>	Mathematics
A. B., Pacific Methodist Coll., 1900.		
McCroskey, John Marshall,	<i>Hollister,</i>	Economics

McDonald, Ella Nancrede,	<i>Pasadena,</i>	French
McDonald, Ralph Augustus,	<i>Lewiston, Idaho,</i>	Education
McDougal, John Hynes,	<i>Belmont,</i>	Electrical Eng.
McDowell, Frances Evelyn,	<i>Los Angeles,</i>	German
McElnay, Elsie,	<i>Oakland,</i>	Physiology
McElroy, Frank Garfield,	<i>Ottumwa, Ia.,</i>	Law
McFadden, Ralph John,	<i>Placentia,</i>	Geology
MacGibbon, Eugene Howard,	<i>San Bernardino,</i>	Geol. Mining
McGilvray, Alex. Beaton Carey,	<i>Stanford University,</i>	Law Sp.
McGilvray, Jessie D.,	<i>Stanford Univ.,</i>	German Sp.
McIntire, Alice Myra,	<i>New Britain, Ct.,</i>	History
McIntosh, George Wade,	<i>Mentone,</i>	Civil Eng. Sp.
McIntyre, Katherine,	<i>Elsinore,</i>	English
Mackay, Minnie Laurie,	<i>Santa Clara,</i>	Botany
McKibber, Mabel,	<i>Palo Alto,</i>	Latin
McKibben, Maud,	<i>Palo Alto,</i>	History
MacLean, Kirby Donald,	<i>Corvallis, Or.,</i>	Mathematics
B. S., Oregon Agr. Coll., 1902.		
MacMillan, Marie,	<i>Jacksonville, Ill.,</i>	English
McMurphy, James Ira Wilson,	<i>Albion,</i>	Zoology Sp.
McNaught, Carl Shelby,	<i>Seattle, Wash.,</i>	Geology
McNaught, Hector Cowan,	<i>Stanford University,</i>	Geology
McNee, Alexander Edward,	<i>Palo Alto,</i>	Physiology
McNee, Royal John Hunter,	<i>Palo Alto,</i>	Physiology
McNeil, Arthur James,	<i>Tracy,</i>	Civil Eng.
MacSwain, Elizabeth Annie,	<i>Santa Clara,</i>	German
McWethy, William Ernest,	<i>Rialto,</i>	Electrical Eng.
Madden, Henry Riley,	<i>Greenwood, B. C.,</i>	Geol.-Mining
Madsen, Peter,	<i>Oakland,</i>	German
A. B., Stanford, 1903.		
Magee, William Patrick,	<i>Fallbrook,</i>	Physiology
Maloy, Jeff L.,	<i>San Jose,</i>	Law
Maloy, Walter C.,	<i>San Jose,</i>	Economics
Manning, William Albert,	<i>Stanford Univ.,</i>	Mathematics
A. B., Willamette Univ., 1900; A. M., Stanford, 1902.		
Mansfield, Albert,	<i>Redwood City,</i>	Geol. and Min.
Mansfield, Edith,	<i>Indiana, Pa.,</i>	Education
Manwaring, Clarence Tryon,	<i>Meriden, Ct.,</i>	Law
Marks, Henry Frank,	<i>San Francisco,</i>	Law
Martin, Adelin,	<i>Mayfield,</i>	Romanic Lang. Sp.

Martin, Homer,	<i>Mayfield,</i>	Latin
Martin, Lulu McCray,	<i>Mayfield,</i>	German Sp.
Martin, Mary Viola,	<i>Woodland,</i>	German
A. B., Stanford, 1902.		
Martin, Percy Alvin,	<i>Los Angeles,</i>	French
A. B., Stanford, 1902.		
Martinson, George,	<i>Palo Alto,</i>	Law
B. S., Kansas State Agr. Coll., 1901.		
Mathews, Bryant,	<i>Los Angeles,</i>	Economics
Mathews, Lois Kimball,	<i>Stanford Univ.,</i>	History
Mathews, Ralph Berkley,	<i>San Jose,</i>	Electrical Eng.
Mathewson, Arthur Adelbert,	<i>Coronado,</i>	Geology and Mining
Maulsby, Lulu Arminta,	<i>Palo Alto,</i>	English
Maw, Charles Edward,	<i>Palo Alto,</i>	Chemistry
May, Ernst Raymond,	<i>Clio, Mich.,</i>	Law
May, Frederic,	<i>Edenvale,</i>	Law Sp.
Mayeda, Frank Kinichiro,	<i>San Francisco,</i>	Zoology
A. B. Stanford, 1903.		
Mayreis, Louis John,	<i>Beardstown, Ill.,</i>	Min. Eng. Sp.
Meachen, Aimee Rhoda,	<i>Mountain View,</i>	History
Meikle, Roy,	<i>Portland, Or.,</i>	Civil Eng.
Meiklejohn, Edward Clark,	<i>Butte, Mont.,</i>	Chemistry
Menker, Raymond Chester,	<i>San Jose,</i>	Philosophy
Merriam, Cyrus Lincoln,	<i>Stanford University,</i>	Chemistry
A. B. Stanford, 1903.		
Merrill, Arthur Tenny,	<i>Red Bluff,</i>	English
Merrill, John Albert,	<i>San Francisco,</i>	Law
Merriman, Laura Elizabeth,	<i>Palo Alto,</i>	English
Mesmer, Marie Josephine,	<i>Los Angeles,</i>	English
Metzler, Anna,	<i>Santa Cruz,</i>	German
Meyer, Alice Marie,	<i>Menlo Park,</i>	English
Millar, Paul E.,	<i>Santa Rosa,</i>	Latin
Miller, Arlin D.,	<i>Portland, Or.,</i>	Electrical Eng.
Miller, Clark Flickner,	<i>Los Angeles,</i>	Civil Eng. Sp.
Miller, Earl Everett,	<i>Vinton, Ia.,</i>	Law
Miller, Edith Frank,	<i>Sacramento,</i>	English
Miller, John M.,	<i>Parlier,</i>	Zoology
Miller, Joseph Adams, Jr.,	<i>Austin, Nev.,</i>	Chemistry
Miller, M. Jennie,	<i>Santa Rosa,</i>	Physiology
Milliken, Ralph Le Roy,	<i>Mitchell, S. D.,</i>	Greek
Miner, Adalaide M.,	<i>Pomona,</i>	History

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Minter, Lulu Marie,	<i>Santa Ana,</i>	Latin
Mirrielees, Edith,	<i>Bigtimber, Mont.,</i>	History Sp.
Mirsky, Minnie M.,	<i>San Francisco,</i>	Greek
Misner, Francis Osborne,	<i>Palo Alto,</i>	Mechanical Eng. Sp.
Mitchell, John Pearce,	<i>Providence, R. I.,</i>	Chemistry

A. B. Stanford, 1903.

Mitcheltree, Lota Mary,	<i>Palo Alto,</i>	English Sp.
Mitoma, Taizo,	<i>East Oakland,</i>	Economics Sp.
Mobley, Blanche Julia,	<i>Stockton,</i>	English
Mockridge, Hamilton Ridley,	<i>San Jose,</i>	Greek
Montgomery, Seymour Thomas,	<i>San Jose,</i>	Law
Monzingo, John Johnson,	<i>Palo Alto,</i>	Civil Eng.
Moore, Du Val,	<i>San Francisco,</i>	Economics
Moore, Ethel Belle,	<i>El Paso, Tex.,</i>	Greek
Moore, Grace Ethel,	<i>Grangeville, Idaho,</i>	Latin
Moore, Grant Hathaway,	<i>Los Gatos,</i>	Civil Eng.
Moore, Luman Gordon Jr.,	<i>Round Mountain,</i>	Physiology
Moran, Hugh Anderson,	<i>Palo Alto,</i>	Greek
Moran, Robert Breck,	<i>Palo Alto,</i>	Geology
Morehead, Alma,	<i>Chico,</i>	Mathematics
Moreing, Helen Sue,	<i>Stockton,</i>	German
Morgan, Winifred June,	<i>Oakland,</i>	Physiology
Mori, Jame,	<i>Pacific Grove,</i>	History
Morin, William James,	<i>Stanford Univ.,</i>	Romanic Lang.
Morris, Earl Leonard,	<i>Santa Ana,</i>	Zoology
Morris, Ruth Eyer,	<i>Los Angeles,</i>	History
Morrison, Harry Lee,	<i>Denver, Colo.,</i>	Geology
Morrison, William Gentry,	<i>Denver, Colo.,</i>	Law
Morrissey, George Edward,	<i>Ottumwa, Ia.,</i>	Economics
Mortenson, Harold Davis,	<i>Stanford University,</i>	Economics
Morton, Mary Isabel,	<i>San Francisco,</i>	Latin
Mosher, Clelia Duel,	<i>Palo Alto,</i>	Physiology

A. B., Stanford, 1893, A. M., 1894; M. D., Johns Hopkins Med. Coll., 1900.

Motz, Ralph Leslie,	<i>Pueblo, Colo.,</i>	Mech. Eng.
Moule, Irene Helen,	<i>San Jose,</i>	English
Moulton, Dudley,	<i>Palo Alto,</i>	Zoology
Moulton, Lina,	<i>Palo Alto,</i>	English
Moulton, Mary Esther,	<i>Palo Alto,</i>	Botany
Mourot, Louise Anna,	<i>Redwood City,</i>	Romanic Lang.

A. B., Stanford, 1902.

Muir, John Church,	<i>Los Angeles,</i>	Civil Eng. Sp.
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Mulvihill, Mary Frances,	<i>Redlands.</i>	Latin
Murgotten, Francis Clark,	<i>San Jose,</i>	Greek
A. B., Stanford, 1901.		
Murphy, Winnifred Catherine,	<i>Tacoma, Wash.,</i>	German
Myers, James Walter,	<i>Portland, Or.,</i>	Education <i>Sp.</i>
Naftzger, Roy Edgar,	<i>Los Angeles,</i>	Economics
Nagel, Alice Emine,	<i>Davenport, Ia.,</i>	Mathematics
Nagel, Laura Ingeborg,	<i>Davenport, Ia.,</i>	German
Nakamura, Taira,	<i>Oakland,</i>	Education <i>Sp.</i>
Nangle, Francis Eaton,	<i>Stanford University,</i>	Law <i>Sp.</i>
Naramore, Chester,	<i>Campbell,</i>	Geology
Narver, Anna Lois,	<i>Los Angeles.</i>	German
Nath, Dorothea Elizabeth,	<i>Davenport, Ia.,</i>	German
A. B., Iowa Coll., 1900.		
Needles, Edna A.,	<i>Palo Alto,</i>	English <i>Sp.</i>
Neff, Andrew Love,	<i>Salt Lake City, Utah,</i>	History
Nelson, Nels Christian,	<i>Palo Alto,</i>	Philosophy
*Newburg, Mervyn Jacobs,	<i>San Bernardino,</i>	Chemistry
A. B., Stanford, 1902.		
Newcomb, Mary Alice,	<i>Palo Alto.</i>	Physiology
Ph. B., Univ. of Pacific, 1889.		
Newcomer, Robert Hitt,	<i>Mt. Morris, Ill.,</i>	English
Newman, Matilda V.,	<i>Stanford University,</i>	English
Nibley, Joel,	<i>Logan, Utah,</i>	Law <i>Sp.</i>
Nichols, Frances B.,	<i>Santa Ana,</i>	English
Nichols, Mary Ernestine,	<i>Bozeman, Mont.,</i>	History
Nicholson, Anne Mary,	<i>San Jose,</i>	Education
Nightingill, Frank William,	<i>Clovis,</i>	Law <i>Sp.</i>
Nikirk, Frank Austin,	<i>San Jose.</i>	Civil Eng.
Nims, Charles Brewster,	<i>Muskegon, Mich.,</i>	Geol.-Mining
Nims, Joy,	<i>Pacific Grove,</i>	Chemistry
Nissen, Roger Christian,	<i>Livermore,</i>	Geol. and Mining
Nobs, Frederick William,	<i>Redwood City,</i>	Geol.-Mining
Nobs, Hattie Elsa,	<i>Redwood City,</i>	German
von Noé, Adolf Charles,	<i>Palo Alto,</i>	German
A. B., Univ. of Chicago, 1900.		
Noon, Grace Agnes,	<i>Palo Alto,</i>	History
North, Helen Kate,	<i>Los Angeles.</i>	Physiology
North, Wheeler Oren,	<i>Los Angeles.</i>	Geology

*Work completed summer, 1902.

Norton, Janet Swift,	<i>San Francisco,</i>	Physiology
Nourse, Bayard Everhart,	<i>San Francisco,</i>	Chemistry
Nyman, Minerva Armanita,	<i>Palo Alto,</i>	French <i>Sp.</i>
Nyman, Rudolph Francis,	<i>Palo Alto,</i>	Law <i>Sp.</i>
Oakford, Benjamin Palmer,	<i>Palo Alto,</i>	* Law

A. B., Stanford, 1902.

O'Brien, Mabel Genevieve,	<i>Merced,</i>	English
O'Brien, Mary Henrietta,	<i>Utica, N. Y.,</i>	English
O'Connell, John Jeremiah,	<i>National City,</i>	Geol. and Min.
Ogier, Adelaide Reid,	<i>San Jose,</i>	History
Ogier, Walter Tullidge,	<i>San Jose,</i>	Mechanical Eng.
Olding, Harriet Ethel,	<i>Vancouver, B. C.,</i>	History <i>Sp.</i>
Olsson-Seffer, P. Hjalmar,	<i>Stockholm, Sweden,</i>	Botany

Universities of Helsingfors and Upsala.

Omori, Hyozo,	<i>Stanford Univ.,</i>	Economics <i>Sp.</i>
O'Neal, Josiah Philip,	<i>Fall Brook,</i>	Mechanical Eng.
Oppenheim, Morris,	<i>San Francisco,</i>	Law
Osborne, Clarence Bristol,	<i>Los Angeles,</i>	Geol. and Mining
Osher, Helen Christine,	<i>Lamberton, Minn.,</i>	German
Owen, Anabel,	<i>Los Angeles,</i>	English <i>Sp.</i>
Page, Joseph Henry,	<i>Stanford University,</i>	Law
Pahl, August Julius,	<i>Stockton,</i>	Electrical Eng.
Paine, Charles Treat,	<i>Redlands,</i>	Economics
Paine, Charlotte,	<i>Redlands,</i>	History
Paine, William Craig,	<i>Redlands,</i>	Electrical Eng.
Palmer, Clayton Franklin,	<i>Stockbridge, Mass.,</i>	Zoology

B. S., Boston Univ., 1897.

Palmer, Henrietta Raymer,	<i>Providence, R. I.,</i>	English
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A. B., Bryn Mawr, 1893.

Palmer, Jessie Bowen,	<i>Pasadena,</i>	German <i>Sp.</i>
Palmer, Thomas Lewis Earle,	<i>Canon City, Colo.,</i>	Law
Park, Robert Nym,	<i>Stanford University,</i>	Geol.-Min.
Park, Sara Reid,	<i>Salt Lake City, Utah,</i>	French
Parker, Paul Percy,	<i>Salinas,</i>	History
Parkinson, Alfred Lerol,	<i>San Jose,</i>	Chemistry
Parkhurst, Minnette Ada,	<i>Pacific Grove,</i>	English
Parsons, Augustus Taber,	<i>San Jose,</i>	Civil Eng.
Parsons, Edith Ferris,	<i>San Jose,</i>	English
Passmore, Maud,	<i>Stanford University,</i>	Physiology
Patterson, Hazel Moore,	<i>Los Angeles,</i>	English

Patterson, Rose,	<i>San Jose,</i>	Entomology
Patterson, William Donald,	<i>Centreville,</i>	Law
Patterson, William John,	<i>San Francisco,</i>	Mining Eng.
Paxton, Charles Hugh,	<i>Orange,</i>	Mechanical Eng. <i>Sp.</i>
Paxton, William Arthur,	<i>Orange,</i>	English
Peach, Charles,	<i>Stanford University,</i>	History
Peck, Anne Earle,	<i>Palo Alto,</i>	Romanic Lang.

A. B., Stanford, 1898.

Peckham, Elizabeth Anne,	<i>Watsonville,</i>	Physiology
Peckham, Gertrude Catherine,	<i>San Jose,</i>	English
Peckham, James Benjamin,	<i>San Jose,</i>	Law
Pedlar, Mary Hazell,	<i>San Francisco,</i>	English
Peek, Frank William, Jr.,	<i>Mokelumne Hill,</i>	Elec. Eng.
Peltier, Victor,	<i>San Francisco,</i>	Civil Eng.
Percival, Harold Spencer,	<i>Corning,</i>	History
Perham, Franklin Eugene,	<i>Stanford University,</i>	English
Perkins, Brigham Andrew,	<i>Salt Lake City, Utah,</i>	Geol. <i>Sp.</i>
Perkins, Edith,	<i>South Pasadena,</i>	German
Perkins, Thomas Gale,	<i>San Francisco,</i>	Economics <i>Sp.</i>
Perrin, Anita Butler,	<i>Stockton,</i>	English
Perrin, Arch,	<i>San Jose,</i>	History
Perry, Emma Harris,	<i>Palo Alto,</i>	Botany <i>Sp.</i>
Perry, Irvin David,	<i>Palo Alto,</i>	Education

A. B., Stanford, 1903.

Perry, Laura Cushman,	<i>San Francisco,</i>	Romanic Lang.
Peterson, Aurora Matilda,	<i>Redwood City,</i>	Latin
Peterson, Ida May,	<i>Middletown,</i>	History
Peterson, Mary Hulda,	<i>Fowler,</i>	History
Petree, Nora Elma,	<i>Palo Alto,</i>	English
Petree, Oran Adrian,	<i>Palo Alto,</i>	Mechanical Eng.
Pettingill, Tallahatchie,	<i>Redlands,</i>	History
Phelps, Louise,	<i>Minneapolis, Minn.,</i>	Philosophy

A. B., Univ. of Minnesota, 1902.

Pierce, Charles Roy,	<i>Erie, Pa.,</i>	Law <i>Sp.</i>
Pike, Robert Dickson,	<i>San Francisco,</i>	Mech. Eng.
Pillot, Mary Augusta,	<i>San Jose,</i>	History
Pitman, Georgia,	<i>Palo Alto,</i>	Zoology
Pole, Francis Charles,	<i>Palo Alto,</i>	Greek
Pollock, Ralph Carleton,	<i>Greeley, Colo.,</i>	Chemistry
Pomeroy, Ernest Younger,	<i>Portland, Or.,</i>	Geol. and Min.

Poor, Nina Foster,	<i>Belfast, Me.,</i>	English
A. B., Wellesley Coll., 1900.		
Porter, Arthur M.,	<i>Berkeley,</i>	Electrical Eng.
Porter, Jennie Sarah,	<i>Palo Alto,</i>	English
Porter, Mabel,	<i>Calistoga,</i>	Latin
Powell, Fred Wilbur,	<i>Three Rivers, Mass.,</i>	Economics
Powers, Nelson Charles,	<i>Stanford University,</i>	German
Prentice, Edwin Whitman,	<i>San Francisco,</i>	Civil Eng.
Preston, Archibald Edward,	<i>Santa Clara,</i>	Geol. and Mining
Preston, Frank Carlton,	<i>Woodside,</i>	Law
Price, Berdella,	<i>Soquel,</i>	Latin
Protzman, Helen,	<i>Santa Cruz,</i>	English
Pugh, Doris,	<i>Redwood City,</i>	English
Purcell, Charles Henry,	<i>Los Angeles,</i>	Civil Eng.
Purviance, Leola Undine,	<i>Watsonville,</i>	Latin
Quelle, Mary Stewart,	<i>Stanford University,</i>	Physics
Raber, Cecil Fanny,	<i>Palo Alto,</i>	French
Ralston, David,	<i>Mayfield,</i>	Economics
A. B., Univ. of Pacific, 1902.		
Ramminger, May Teresa,	<i>San Jose,</i>	Physiology Sp.
Randall, William Ramsey Dows,	<i>Palo Alto,</i>	Physiology
Randolph, Flora Albertina,	<i>Palo Alto,</i>	Botany
A. B., Wellesley Coll., 1902.		
Ray, Mabel Clara,	<i>Long Beach,</i>	Zoology
Reardon, Joseph Erwin,	<i>San Jose,</i>	Law
Rebendorff, Maria Martha,	<i>Berkeley,</i>	German
Record, Seth Watrous,	<i>Palo Alto,</i>	Mathematics
Reed, Haines Wadsworth,	<i>Los Angeles,</i>	Economics
Reed, Inez Whitmore,	<i>Oakland,</i>	Mathematics
Reed, Samuel Payne, Jr.,	<i>Los Gatos,</i>	Electrical Eng.
Reeves, Edna Mary,	<i>Ukiah,</i>	Zoology
Renaud, Ralph Edward,	<i>Stanford University,</i>	English
Reynolds, Delmar Milton,	<i>Pasadena,</i>	English
Reynolds, Emily Irene,	<i>Palo Alto,</i>	English
Reynolds, Marion Fred,	<i>San Bernardino,</i>	History
Rhuart, Archibald Bennett,	<i>Los Angeles,</i>	Law
Rice, Daisy Ardine,	<i>Santa Ana,</i>	Latin
Rice, Edward Walter,	<i>Oakland,</i>	Law
A. B., Stanford, 1902.		
Richards, Alice May,	<i>Palo Alto,</i>	History

Richards, Charles Maynard,	<i>San Jose,</i>	Physiology
Richardson, Karl Asa.	<i>Worcester, Mass.,</i>	Civil Eng.
Richmond, Frank Adams,	<i>Redlands,</i>	Zoology
A. B. Stanford, 1903.		
Rider, William Leslie,	<i>Palo Alto,</i>	History
A. B. Stanford, 1902.		
Risley, Allan Douglass,	<i>Palo Alto,</i>	Drawing
Riste, Edgar Garver,	<i>Palo Alto,</i>	Law Sp.
Ritchie, Agnes Sibbald,	<i>Palo Alto,</i>	History
Ritchie, William,	<i>Fields Landing,</i>	Law
Riter, Linville Calder,	<i>Salt Lake City, Utah,</i>	Economics Sp.
Rittenhouse, Emmet Lloyd,	<i>Santa Cruz,</i>	Law
Ritter, Ovid Herbert,	<i>Stockton,</i>	Latin
Rixford, Katherine Tillinghast,	<i>San Francisco,</i>	French
Rixon, Charlotte Amelia,	<i>Los Angeles,</i>	History
A. B. Stanford, 1903.		
Robbins, William Arthur,	<i>Palo Alto,</i>	Law Sp.
Roberts, Charles Royden,	<i>San Diego,</i>	Philosophy
Roberts, Milnora de Beelen,	<i>Stanford University,</i>	German
Robinson, Don,	<i>Springfield, Mo.,</i>	Law
Robinson, Harold Allison,	<i>Los Angeles,</i>	Law Sp.
Robinson, Sarah Alice,	<i>Oakland,</i>	Drawing
Robinson, Walter Hall,	<i>Snelling,</i>	History Sp.
Rocca, Beatrice Marie,	<i>Middletown,</i>	English
Rockey, Paul	<i>Portland, Or.,</i>	Physiology
Rockwell, Guy Lionel.	<i>Compton,</i>	Romanic Lang.
Roehr, Frank,	<i>San Jose,</i>	Law
Rogers, Thomas Farwell,	<i>San Jose,</i>	Civil Eng.
Roller, Jennie Josephine,	<i>Palo Alto,</i>	English
Rood, Clara Jessie,	<i>Pasadena,</i>	German
Roosevelt, Will Kelley,	<i>Ackley, Ia.,</i>	Mining Eng.
Roscoe, William Wallace,	<i>Upper Mattole,</i>	History Sp.
Rose, Andrew Henry,	<i>Ontario,</i>	Law
Rose, Mary Ada,	<i>Compton,</i>	Drawing
Roseberry, Eva,	<i>Pope Valley,</i>	Drawing
Roseberry, Fred Thomas,	<i>Pope Valley,</i>	Geology
Roseberry, Louis Heaton,	<i>Pope Valley,</i>	Law
Rosenfeld, James Wendal,	<i>Portland, Or.,</i>	Physiology
Ross, Almond Bartlett,	<i>Pomona,</i>	Economics Sp.
Ross, Carl Thorburn,	<i>Astoria, Or.,</i>	Physiology

Ross, Florence Julia,	<i>Wabash, Ind.,</i>	Chemistry
Ross, Hall Carlos,	<i>Belmont,</i>	Law
Rosseter, Myrtle Brace,	<i>Redwood City,</i>	German
Rothrock, Data Ethel,	<i>Spokane, Wash.,</i>	German
Rouiller, Charles August,	<i>Paraje, N. M.,</i>	Chemistry
A. B., Stanford, 1903.		
Rowell, Bernice C.,	<i>Easton,</i>	German
Rowell, Edna Ellen,	<i>Easton,</i>	Physiology
A. B., Stanford, 1903.		
Ruddy, Charles Alfred,	<i>Seattle, Wash.,</i>	Geology
A. B. Univ. of Washington, 1901.		
Rugh, Charles Edward,	<i>Clarion, Pa.,</i>	Education
Rusk, Hester Dresser Babb,	<i>Palo Alto,</i>	Economics <i>Sp.</i>
Russell, Isaac,	<i>Stanford University,</i>	English
Russell, Lawrence Greenleaf,	<i>San Francisco,</i>	Mech. Eng. <i>Sp.</i>
Rust, Edward Butler,	<i>San Jose,</i>	Geology and Mining
Ruth, Anna Frances,	<i>Pomona,</i>	Greek
A. B., Stanford, 1902.		
Ryan, John Joseph,	<i>Gilroy,</i>	History
A. B., Stanford, 1903.		
St. Johns, Mabel,	<i>Whittier,</i>	English
Sales, Dudley Daniel,	<i>Denver, Colo.,</i>	Law
Salisbury, Helen Molyneaux,	<i>Los Angeles,</i>	English
Sanborn, George Francis,	<i>Fruitvale,</i>	Zoology <i>Sp.</i>
Sanders, Ethyl Grace,	<i>Spokane, Wash.,</i>	Latin
Sanderson, Jerry Blaine,	<i>Oakland,</i>	Geology and Mining
Sanger, Walter Max,	<i>Los Angeles,</i>	Mech Eng. <i>Sp.</i>
Sankey, Stella Belle,	<i>Palo Alto,</i>	Drawing <i>Sp.</i>
Sappington, Carrie,	<i>Salt Lake City, Utah,</i>	History <i>Sp.</i>
Saunders, Benjamin Rankin,	<i>Redwood City,</i>	Geol. and Min.
Savage, Henry Ennis,	<i>Salem, Or.,</i>	Geol. and Mining
Savvyer, Frances Caroline,	<i>San Jose,</i>	English
Sayre, Edith Athalia,	<i>San Francisco,</i>	Economics
Scales, Henry Crowell,	<i>De Lamar, Idaho,</i>	Economics
Schaaf, Daniel Louis,	<i>San Jose,</i>	Electrical Eng.
Schanck, Francis Raber,	<i>Elsinore,</i>	Mechanical Eng.
A. B., Stanford, 1903.		
Schino, Louis Joseph,	<i>Merced,</i>	Law <i>Sp.</i>
Schlesinger, Arthur C.,	<i>San Francisco,</i>	Electrical Eng.
Schneider, Florence Margaret,	<i>Palo Alto,</i>	Zoology

Schneider, Frederick,	<i>Palo Alto,</i>	<i>Law Sp.</i>
Schofield, Frank Crain,	<i>Dunkirk, Ind.,</i>	<i>English</i>
A. B., Ohio Univ., 1895, A. M., 1897.		
Scholfeld, William Rufus,	<i>Wausau, Wis.,</i>	<i>Civil Eng.</i>
Schulte, Walter Gustav Adolph,	<i>San Francisco,</i>	<i>Physiology</i>
Shulz, Lou Ernest,	<i>Porterville,</i>	<i>Mechanical Eng.</i>
*Shulz, Roy Edwin,	<i>Redlands,</i>	<i>Latin</i>
A. B., Stanford, 1902.		
Schwartz, Albert John,	<i>Palo Alto,</i>	<i>Mathematics</i>
A. B. Stanford, 1903.		
Schwarzkopf, Rudolph Herrmann,	<i>Palo Alto,</i>	<i>Physiology Sp.</i>
Scott, Anne Lockerby,	<i>Pomona,</i>	<i>English</i>
Scoville, George Albert,	<i>Corona,</i>	<i>Electrical Eng.</i>
Scoville, Gilbert Lafayette,	<i>Corona,</i>	<i>Electrical Eng.</i>
Scoville, Harry Franklin,	<i>Corona,</i>	<i>Law</i>
Seadler, Ruth Estelle,	<i>San Francisco,</i>	<i>Spanish</i>
Seargeant, Lawrence Herring,	<i>Pasadena,</i>	<i>Mechanical Eng.</i>
Sears, Maud May,	<i>Rhonerville,</i>	<i>Physiology</i>
Seibert, Donald Kingsland,	<i>San Francisco,</i>	<i>Law</i>
Seminario, Jose Ysaac Suarez,	<i>San Francisco,</i>	<i>Law</i>
Severance, Harriet Crittenden,	<i>Arrowhead,</i>	<i>English</i>
Sevier, Irving Henry,	<i>Eureka,</i>	<i>Geology and Mining</i>
Seymour, Edward Lucius,	<i>Turin, N. Y.,</i>	<i>Philosophy</i>
A. B., Park Coll., 1898.		
Shadburne, Wade Hampton,	<i>San Francisco,</i>	<i>Law</i>
Sharpe, Howard Brookes,	<i>Oxnard,</i>	<i>Geology</i>
Sheehy, John Joseph,	<i>San Rafael,</i>	<i>Geology</i>
Shelley, Oswald Proctor,	<i>San Jose,</i>	<i>Civil Eng.</i>
Sheriffs, Alexander,	<i>San Jose,</i>	<i>Law</i>
Sherry, Ralph Harrison,	<i>Troy, N. Y.,</i>	<i>Chemistry</i>
Sherwood, Frances Marie,	<i>Los Angeles,</i>	<i>English</i>
A. B., Stanford, 1903.		
Sherwood, Minor Correll,	<i>Oklahoma City, Okla.,</i>	<i>German</i>
Shibamiya, Yasohiko,	<i>Tokyo, Japan,</i>	<i>English</i>
Shields, Harvey,	<i>Eureka,</i>	<i>Electrical Eng.</i>
Shine, Albert Thomas,	<i>Redwood City,</i>	<i>Geol., Mining</i>
Shipley Eugénie Marie,	<i>Palo Alto,</i>	<i>Romanic Lang.</i>
A. B., Stanford, 1902.		
Shipley, Howard Maynard,	<i>Palo Alto,</i>	<i>Economics Sp.</i>

*Work completed summer, 1902.

Shutt, Nathan Emery,	<i>Santa Monica,</i>	Chemistry
Shutts, Fred Ordway,	<i>Los Angeles,</i>	Civil Eng. <i>Sp.</i>
Silvey, Antone,	<i>Elmira,</i>	Economics
Simon, Elizabeth,	<i>Santa Rosa,</i>	German
Simon, Marie,	<i>Santa Rosa,</i>	Physiology
Simpson, Gertrude Margaret,	<i>San Jose,</i>	English <i>Sp.</i>
Sindo, Michitaro,	<i>Stanford Univ.,</i>	Physiology <i>Sp.</i>
Singletary, George C.,	<i>San Jose,</i>	Geology and Mining
Sisson, Louis Eugene,	<i>Palo Alto,</i>	English
Skinner, Edwin Hume,	<i>San Jose,</i>	Romanic Lang.
Slayton, Bertha Mable,	<i>Aromas,</i>	English
Sloan, William Henry,	<i>Palo Alto,</i>	Chemistry

A. B., Stanford, 1903.

Smith, Archibald Clarence,	<i>Menlo Park,</i>	Mathematics
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A. B., Univ. of Toronto, 1901.

Smith, Clara Castella,	<i>Los Angeles,</i>	English
Smith, Corinna Ellen,	<i>Cleveland, Ohio,</i>	Latin
Smith, Edgar C.,	<i>Pocatello, Idaho,</i>	Mech. Eng.
Smith, Edward Augustus, Jr.,	<i>Stanford University,</i>	Geology
Smith, Eugenie D.,	<i>Palo Alto,</i>	English <i>Sp.</i>
Smith, Frank Gerard,	<i>Palo Alto,</i>	Law <i>Sp.</i>
Smith, George William,	<i>Denver, Colo.,</i>	Chemistry <i>Sp.</i>
Smith, Gertrude Mary,	<i>Campbell,</i>	Greek
Smith, Lewis Eaton,	<i>Pasadena,</i>	Civil Eng.
Smith, Margaret Bell,	<i>San Francisco,</i>	Chemistry
Smith, Otto Kaspar,	<i>San Francisco,</i>	Mech. Eng. <i>Sp.</i>
Smith, Paul Lavendee,	<i>Paso Robles,</i>	Geology
Smith, Putnam Busk,	<i>Ferndale,</i>	Law
Smith, Stanley,	<i>Redwood City,</i>	Romanic Lang.
Snively, Harry Norman,	<i>Waynesboro, Pa.,</i>	Chemistry
Snoddy, James Samuel,	<i>Valley City, N. D.,</i>	English

A. B., Univ. of Missouri, 1883; A. M., Univ. of Nebraska, 1898.

Snyder, Cora Adelfa,	<i>Waterloo, Ind.,</i>	Botany
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A. B., Indiana Univ., 1896.

Snyder, Edwin Reagan,	<i>San Jose,</i>	Education
Sohler, Frank Ernest,	<i>Palo Alto,</i>	Chemistry
Soulé, Claire,	<i>San Bernardino,</i>	History
Sowell, Ernest Elmer,	<i>Wheatland,</i>	Law <i>Sp.</i>
Spalding, Jane McCormick,	<i>Los Angeles,</i>	English
Spaulding, Milo Herrick,	<i>Palo Alto,</i>	Zoology

A. B., Stanford, 1903.

Spellman, John William,	<i>Lincoln, Ill.,</i>	History
Spencer, Allan Thomas,	<i>Palo Alto,</i>	Geology
Spencer, Edith Emerson,	<i>Los Angeles,</i>	English
Spencer, Omar Corwin,	<i>Stanford University,</i>	Law
Splivalo, Raymond Bachelder,	<i>Belmont,</i>	Economics
Sprague, Helen Louise,	<i>Sacramento,</i>	Economics
Sprague, Hobart Almerin,	<i>Sacramento,</i>	History <i>Sp.</i>
Sprague, Manville Hewitt,	<i>Grafton, N. D.,</i>	Mathematics
Springmeyer, George,	<i>Genoa, Nev.,</i>	Law

A. B., Univ. of Nevada, 1902.

Sprott, Walter Keith,	<i>Porterville,</i>	Mechanical Eng.
Stack, William Joseph,	<i>Santa Cruz,</i>	Latin
Stafford, Grace Estelle,	<i>Eureka,</i>	History
Stahl, Edith,	<i>San Jose,</i>	Romanic Lang.
Staley, Oscar Clifton,	<i>Irvington,</i>	Chemistry
Standish, Roy B.,	<i>Kansas City, Mo.,</i>	Law <i>Sp.</i>
Stanford, James Nichols,	<i>Olympia, Wash.,</i>	Elec. Eng.
Stanford, Rawghlie Clement,	<i>Phoenix, Ariz.,</i>	Law <i>Sp.</i>
Stanley, Owen Garrett,	<i>Kelseyville,</i>	Mathematics
Starbuck, Anna Diller,	<i>Palo Alto,</i>	Philosophy
Starbuck, Flora Edna,	<i>Palo Alto,</i>	English
Stearns, Myron Morris,	<i>Hartford, Conn.,</i>	Law
Stedler, Charles John,	<i>San Francisco,</i>	Geol.-Min. <i>Sp.</i>
Steel, Donald,	<i>Brownsville,</i>	Geol. and Mining
Steel, Susan Ella,	<i>Brownsville,</i>	English
Stephens, Charles Thomas,	<i>Stanford University,</i>	Chemistry

A. B., Stanford, 1903.

Stephens, Elsie Jane,	<i>Palo Alto,</i>	German <i>Sp.</i>
Stephens, Leroy Hamilton,	<i>San Jose,</i>	Greek

A. B., Stanford, 1902.

Stephenson, Ruth Millicent,	<i>Stanford University,</i>	Greek
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A. B., Stanford, 1903.

Stephenson, Terry Elmo,	<i>Orange,</i>	History
Sterling, Lewis Milton,	<i>Redwood City,</i>	Law <i>Sp.</i>
Sterrett, Roger John,	<i>Pasadena,</i>	English

A. B., Stanford, 1903.

Stetson, Edith Olive Harlow,	<i>Los Gatos,</i>	German
Stevens, Arthur William,	<i>San Bernardino,</i>	Civil Eng. <i>Sp.</i>
Stevens, Frank Asbury,	<i>Stanford University,</i>	Law

A. B., Stanford, 1902.

Stevens, George Richards,	<i>Benicia,</i>	Geology and Mining
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Stevens, Maude Frances, *Palo Alto*, History
A. B., Stanford, 1901.

Stevenson, Clara, *Fair Oaks*, English
Stevenson, Cornelia, *Seattle, Wash.*, English
Stevenson, Ethel McQuaid, *Vallejo*, History
Stiles, Albert Irvine, *Washington, D. C.*, Civil Eng.
Stiles, Henry Wilson, *Palo Alto*, Physiology Sp.
Stillman, Cara, *Stanford University*, English
Stillman, Edgar, *San Francisco*, German
Stillman, Minna, *Stanford Univ.*, Mathematics

A. B. Stanford, 1903.

Stillson, Harriet Alice, *Craig, Neb.*, English
Stingley, Lela Lorena, *Berkeley*, Mathematics
Stolz, Mary Rosalie, *Redlands*, English
Stone, Alice Grace, *San Jose*, Latin
Stone, Clinton Erwyn, *San Jose*, History
Stork, Victor Eytinge, *Sierra Madre*, Physiology
Strange, Bessie, *San Jose*, Chemistry
Strassburger, Lawrence, *San Francisco*, Economics
Stream, Edwin Glen, *Creston, Ia.*, Law
Strong, Harold William, *Corvallis, Or.*, Law
Stroud, Genevieve, *Alhambra*, English
Stroud, Gertrude Esther, *Alhambra*, English
Strunsky, Rose, *San Francisco*, History
Studley, Clarence Knight, *Adin*, Physics Sp.
Sturges, Charles Everett, *San Jose*, Physiology Sp.
Suhr, Rebecca Selena, *San Bernardino*, Law
Surr, Joseph Gordon, *San Francisco*, Geology Sp.
Sussman, Leo I., *San Francisco*, Chemistry
Sutherland, Emma Roberta Lee, *Berkeley*, Physiology Sp.
Suzzallo, Anthony Henry, *San Jose*, Education

A. B., Stanford, 1899.

Sweetman, Claire Frederica, *Billings, Mont.*, Latin
Swickard, Andrew, *San Jose*, Civil Eng.
Swindells, Charles Jay, *Stanford University*, Law

A. B., Stanford, 1902.

Swinerton, Alfred Bingham, *San Francisco*, Geology
Swing, Phil David, *San Bernardino*, English
Swing, William Walter, *San Bernardino*, Education
Taber, Stephen, *Richmond, Va.*, Mining Eng.

Taft, Muriel Charlena,	<i>Santa Monica,</i>	English
Takesaki, Yasoo,	<i>Oakland,</i>	Philosophy
Talbot, Earle,	<i>San Francisco,</i>	Civil Eng.

A. B., Stanford, 1902.

Tanaka, Shintaro,	<i>Stanford Univ.,</i>	Economics
Taoko, Tatsujiro,	<i>Takamatsu, Japan,</i>	Economics
Tarbell, George Armstrong,	<i>Cumberland, B. C.,</i>	Elec. Eng. <i>Sp.</i>
Tarbell, Olga S.,	<i>Santa Rosa,</i>	Zoology
Tarbell, Ruth Georgia,	<i>Santa Rosa,</i>	English
Tarpey, David,	<i>Palo Alto,</i>	Geology and Mining
Tarpey, Paul Albert,	<i>Palo Alto,</i>	Law
Taylor, Charles Bertrand,	<i>Suisun,</i>	Mining Eng. <i>Sp.</i>
Taylor, Charles Marvin,	<i>Menlo Park,</i>	Electrical Eng.
Taylor, John Calvin,	<i>San Francisco,</i>	Physiology
Taylor, Wilder,	<i>Eureka,</i>	Geology <i>Sp.</i>
Taylor, William Ross,	<i>Palo Alto,</i>	Physiology
Teehan, George Francis,	<i>Providence, R. I.,</i>	Chemistry
Thayer, Edward Irving,	<i>Stanford University,</i>	Law
Thomas, Beulah Ruth,	<i>Palo Alto,</i>	Law <i>Sp.</i>
Thomas, Charles Wilbur, Jr.,	<i>Woodland,</i>	Greek

A. B., Stanford, 1903.

Thomas, George M.,	<i>Santa Rosa,</i>	Economics
Thomas, Macajan Anderson, Jr.,	<i>Ukiah,</i>	Law
Thomas, Monroe Hardon,	<i>Palo Alto,</i>	Law

A. B., Stanford, 1903.

Thompson, Andrew Garl,	<i>Stanford University,</i>	Law
Thompson, Bertha Henney,	<i>Palo Alto,</i>	Botany
Thompson, Charles Henry,	<i>Clovis,</i>	Systematic Botany
Thompson, Charles Silent,	<i>Paso Robles,</i>	Zoology
Thompson, Estelle,	<i>San Jose,</i>	History
Thompson, Mary Evangeline,	<i>Palo Alto,</i>	English <i>Sp.</i>
Thomson, Austin McKee,	<i>Stanford University,</i>	Geology
Thomson, Charles Alexander,	<i>Pictore, Nova Scotia,</i>	Greek

A. B., Dalhousie Coll., 1900.

Thomson, Jessie Giffen,	<i>Stanford Univ.,</i>	German <i>Sp.</i>
Thomson, William Henry,	<i>Stanford University,</i>	History
Thorpe, Merle Harrold,	<i>Ellsworth, Kans.,</i>	Law
Thorpe, Roy Pearl,	<i>Garden City, Kans.,</i>	Elec. Eng.
Timmons, Myrtle Leonore,	<i>Santa Ana,</i>	English
Toll, Asahel Clark,	<i>Baldwinsville, N. Y.,</i>	Civil Eng.

Tompkins, Clara Alice,	<i>Paris, Ill.,</i>	Botany
Toothaker, Alva Ray,	<i>Sheldon, Ia.,</i>	Philosophy
Toothaker, Lucia Mae,	<i>Sheldon, Ia.,</i>	Greek
Torrance, Elisha Swift, Jr.,	<i>San Diego,</i>	Law
Townsend, Vera,	<i>Palo Alto,</i>	German

A. B., Stanford, 1901.

Townsley, Lora Emogene,	<i>Kearney, Neb.,</i>	English <i>Sp.</i>
Tracy, Harold Reiss,	<i>Washington, D. C.,</i>	Chemistry
Trader, Harrold,	<i>Stanford University,</i>	Latin

A. B., Stanford, 1902.

Trader, Kittie Louise,	<i>Stanford Univ.,</i>	Rom. Lang.
Traphagen, Hazel Adah,	<i>Los Angeles,</i>	Physiology
Traphagen, Katharine Ethel,	<i>Los Angeles,</i>	English
Treat, Henry Alexander,	<i>Los Angeles,</i>	Mathematics
Trent, Inez Vaughan,	<i>Stanford Univ.,</i>	French <i>Sp.</i>
Trent, Walter Edwin,	<i>Stanford Univ.,</i>	Geology <i>Sp.</i>
Tripp, Lydia Mae,	<i>Palo Alto,</i>	History
Tritch, Walter Edwin,	<i>Forest Hill,</i>	Chemistry
Trost, Brice Loveland,	<i>Ferndale,</i>	Electrical Eng.
Trowbridge, Alfred Lockwood,	<i>Portland, Or.,</i>	Civil Eng.
Trowbridge, Frank Hudson,	<i>Portland, Or.,</i>	Electrical Eng.
Truesdell, Amelia Woodward,	<i>San Francisco,</i>	English

A. B., Stanford, 1903.

Tucker, Clay Harrison,	<i>Selma,</i>	Law <i>Sp.</i>
Tucker, Frank Blackburn,	<i>Washington, D. C.,</i>	Latin
Turner, James Ernest,	<i>Kansas City, Mo.,</i>	Chemistry
Turner, Waldo Egerton,	<i>San Jose,</i>	Law
Turpin, Floyd Light,	<i>San Francisco,</i>	Law
Tuttle, Kenneth,	<i>Plattsburgh, N. Y.,</i>	Law
Tyler, Willard Thurston,	<i>Woodland,</i>	Electrical Eng.
Uchida, Yausuke,	<i>Yamaguchi, Japan,</i>	English
Ulrich, Ferdinand Emil,	<i>Lamar, Mo.,</i>	Law <i>Sp.</i>
Utaka, Hyosaku,	<i>San Francisco,</i>	English <i>Sp.</i>
Van der Burgh, Ludlow Hoffmann,	<i>Fall River, Mass.,</i>	Chem.
Van Dine, Melvin Everett,	<i>Cupertino,</i>	Law
Van Gilder, Isadore Stuart,	<i>Denver, Colo.,</i>	Mathematics
Van Norden, Maximilian Langdon,	<i>Sacramento,</i>	Geology
Van Sickie, True,	<i>San Jose,</i>	Economics
Van Uxem, Louise,	<i>Oakland,</i>	History <i>Sp.</i>
Vaughn, Florence Mabelle,	<i>Pomona,</i>	Drawing

Vickers, Anna,	<i>Los Angeles,</i>	English
Vorhes, May Earhart,	<i>San Diego,</i>	English
Voss, Maxwell Hughes,	<i>Palo Alto,</i>	Chemistry
Vrooman, Gracia M. B. Black,	<i>San Francisco,</i>	French
Wagner, Adela Beatrice,	<i>Ventura,</i>	History
Waite, Charles Edgar,	<i>Riverside,</i>	Economics
Wakeman, Earl Seeley,	<i>Campbell,</i>	English
Walker, Edna Rawlings,	<i>Palo Alto,</i>	German

A. B., Stanford, 1903.

Walker, Henrietta Mae,	<i>Denver, Colo.,</i>	Latin
Walker, Laura,	<i>Des Moines, Ia.,</i>	English
Walker, Lon Cain,	<i>Palo Alto,</i>	Mathematics

A. B., Stanford, 1900. A. M., 1902.

Walker, William Lester,	<i>Monrovia,</i>	Geology
Walling, William Benson,	<i>Erie, Pa.,</i>	English
Wanzer, Florence Helena,	<i>Santa Cruz,</i>	English
Ward, Milola Joy,	<i>Portland, Or.,</i>	English
Warfield, Richard Emerson,	<i>San Francisco,</i>	Chemistry
Waring, Gerald Ashley,	<i>Fallbrook,</i>	Geology
Waterhouse, Ruth Angeline,	<i>San Francisco,</i>	English
Waterman, William Arthur,	<i>Palo Alto,</i>	Mech. Eng. Sp.
Waxam, Marjorie Evelyn,	<i>Palo Alto,</i>	English

A. B., Wellesley Coll., 1898.

Way, Alvah Bing,	<i>Redwood City,</i>	Education
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Ph. B., Ottawa Univ., 1897.

Weaver, Gertrude Benjamin,	<i>Palo Alto,</i>	French
Webb, Leslie Judson,	<i>San Diego,</i>	Law
Weinmann, Louis Randolph,	<i>Alameda,</i>	Law
Weihe, Harry Augustus,	<i>San Francisco,</i>	Law
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Ph. B., Colorado Coll., 1902.

Weller, Fanny Emily,	<i>Palo Alto,</i>	English
Weller, Milo James,	<i>Ft. Bragg,</i>	Civil Eng.
Wellman, Anna Winifred,	<i>Carlsbad,</i>	English Sp.
Wells, Edward Pomeroy,	<i>Quincy, Ill.,</i>	Law
Wenceslow, Marguerite Loudon,	<i>San Jose,</i>	English
Wentz, Walter Yeeling,	<i>San Diego,</i>	English Sp.
West, Raymond Fred,	<i>Seattle, Wash.,</i>	Law
Wheeler, Frank R.,	<i>Tacoma, Wash.,</i>	Mech. Eng. Sp.
Wheeler, Howard D.,	<i>Montclair, N. J.,</i>	Psychology Sp.

Whitaker, Frederick Prescott,	<i>Los Gatos,</i>	Law
Whitaker, William Franklin,	<i>Bakersfield,</i>	Civil Eng.
White, May F. Houghton,	<i>Cathay,</i>	Zoology
Whitehead, Helen,	<i>Chicago, Ill.,</i>	Economics
Whiteside, Donald Irwin,	<i>Belleville, Ill.,</i>	Civil Eng. Sp.
Whiting, Charles Henry,	<i>Berkeley,</i>	Chemistry Sp.
Whitmore, Herbert Marcellus,	<i>San Jose,</i>	Electrical Eng.
Whitney, Frederick Eli,	<i>San Jose,</i>	English Sp.
Wiegel, Louis H.,	<i>Irwin, Pa.,</i>	Mechanical Eng.
Wigle, Keith Elihue,	<i>Palo Alto,</i>	Economics

A. B., Stanford, 1903.

Wilbur, Fred Miner,	<i>Marshalltown, Ia.,</i>	Chemistry
Wilbur, Theresa May,	<i>Los Angeles,</i>	Mathematics
Wilder, Richard Timothy,	<i>Berkeley,</i>	Geol. and Mining Sp.
Wiley, De Witt Charles,	<i>Stanford University,</i>	Geology
Williams, Anne Jane,	<i>Ventura,</i>	History
Williams, Ansel Smith,	<i>Los Angeles,</i>	History
Williams, Edwin Henry,	<i>San Jose,</i>	Law

A. B., Stanford, 1902.

Williams, Flora,	<i>North Salem, Ind.,</i>	English
Williams, Lenore Lorain,	<i>Portland, Or.,</i>	English
Williams, Paul S.,	<i>San Jose,</i>	Physiology
Williams, Robert Arthur,	<i>Portland, Or.,</i>	Physiology
Williams, William Alfred,	<i>San Miguel,</i>	Geology
Wilson, Arden Martin,	<i>Cleveland, O.,</i>	Geol. and Mining
Wilson, Doxey Robert,	<i>San Jose,</i>	Mechanical Eng.
Wilson, Harriet L.,	<i>San Jose,</i>	English
Wilson, Julia Edna,	<i>Palo Alto,</i>	French
Wilson, Olive,	<i>Elmira,</i>	Philosophy
Wilson, Orrin Allen,	<i>Stanford University,</i>	Economics
Winans, Claude,	<i>San Jose,</i>	Law
Wineburgh, Eva Esmond,	<i>San Francisco,</i>	English
Winslow, Mercelia Anna,	<i>Pasadena,</i>	English
Wintler, Carl Butler,	<i>Stanford University,</i>	Law
Wirt, William,	<i>Santa Rosa,</i>	English
Wolcott, Oliver George,	<i>Palo Alto,</i>	Economics
Wolff, Marcus,	<i>San Francisco,</i>	Economics Sp.
Wolfey, May,	<i>Palo Alto,</i>	English
Wolfey, Nettie Orcena,	<i>Palo Alto,</i>	Physiology
Wood, Ella Gertrude,	<i>Pasadena,</i>	English

Wood, John Graham,	<i>Indianapolis, Ind.,</i>	Mech. Eng.
Wood, Lee Axtell,	<i>San Diego,</i>	History
A. B., Pomona Coll., 1900; A. B., Stanford, 1902.		
Wood, Winifred,	<i>Palo Alto,</i>	History
Woodhams, Frederick Oscar,	<i>Santa Clara,</i>	Electrical Eng.
Woodruff, Eleanor Brittan,	<i>Whittier,</i>	German Sp.
Woodruff, George Hobart,	<i>Whittier,</i>	Law
Woods, Pansy May,	<i>Palo Alto,</i>	English
Wooster, Charles Bassett,	<i>Eden Vale,</i>	Law
Worstell, Harrold Egbert,	<i>Palo Alto,</i>	Law
Worstell, Lawrence Evert,	<i>Palo Alto,</i>	Law
Wotkyns, Benjamin Marshall,	<i>Pasadena,</i>	Economics
Wright, Charles Frederick,	<i>San Luis Obispo,</i>	Physics
A. B., Stanford, 1896, A. M., 1897.		
Wright, Emma Minerva,	<i>San Francisco,</i>	Economics
Wright, George Henry Burwell,	<i>Redlands,</i>	English
A. B., Stanford, 1898.		
Wright, Irene Aloha,	<i>Pueblo, Colo.,</i>	History
Wyckoff, Harry Alphonso,	<i>Ukiah,</i>	Chemistry
Wyllie, Andrew Kesner,	<i>Cedarville,</i>	Law Sp.
Wynne, Estella Frances,	<i>San Francisco,</i>	English
Yafune, Yoshimasa,	<i>San Francisco,</i>	Economics
Yasuda, John Katsukichi,	<i>San Francisco,</i>	Psychology
Yerington, Henry Herbert,	<i>Carson, Nev.,</i>	Physiology
Yoch, Bertha Mary,	<i>Santa Ana,</i>	German
Yoch, Elizabeth Clementine,	<i>Santa Ana,</i>	Latin
Yoell, Beatrice Ethel,	<i>San Jose,</i>	Latin
Yoshimi, Masashi,	<i>Tokyo, Japan,</i>	Education
Young, Charles Newton,	<i>Pomona,</i>	Civil Eng.
Young, Waldemar,	<i>Salt Lake City, Utah,</i>	English
Zint, Harry Lee,	<i>Denver, Colo.,</i>	French
Zoffman, George Fred,	<i>Jolon,</i>	Geology and Mining
Zook, Edgar Mitchell,	<i>Fontanelle, Ia.,</i>	Law Sp.
Zschokke, Theodore Christian,	<i>Palo Alto,</i>	History

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Lecturers.....	1	130
OTHER OFFICERS.....		33

STUDENTS

IN GRADUATE STANDING	119
UNDERGRADUATES.....	1161
SPECIAL STUDENTS.....	203
Total	1483

BY MAJOR SUBJECTS

Major Subject	Graduate	Undergraduate	Special	Total	*No. Students taking work	*Sum of all class lists
Greek.....	6	18	—	24	†218	261
Latin.....	4	62	1	67	127	206
German.....	9	56	12	77	374	547
Romanic Languages...	9	39	7	55	364	496
English.....	16	184	23	223	911	1144
Bibliography.....	—	—	—	—	13	13
Philosophy.....	1	14	1	16	‡237	259
Psychology.....	1	4	1	6	96	110
Education.....	3	18	4	25	295	373
History.....	8	90	10	108	380	508
Economics.....	3	69	16	88	392	447
Law.....	18	142	37	197	111	375
Drawing.....	1	14	3	18	62	82
Mathematics.....	7	30	2	39	277	427
Physics.....	3	5	1	9	187	195
Chemistry.....	3	65	10	78	185	298
Botany.....	6	12	1	19	59	64
Hygiene.....	—	—	—	—	512	576
Physiology.....	4	61	20	85	80	133
Zoology.....	6	28	2	36	‡165	194
Entomology.....	2	1	—	—	—	—
Geology.....	5	109	13	127	150	228
Civil Eng.....	2	55	11	68	139	177
Mechanical Eng.....	1	31	18	50	212	298
Electrical Eng.....	1	54	10	65	17	49
Manual Training.....	—	—	—	—	93	93

* Second semester.

† Including 158 Non-Greek students.

‡ Including 154 students taking only Social Ethics.

§ Including 73 students taking only Organic Evolution.

|| Included in Zoology.

BY RESIDENCE

California.....	1171	Kansas.....	3
Washington.....	29	New Mexico.....	3
Oregon.....	28	North Dakota.....	3
Colorado.....	27	Rhode Island.....	3
Illinois.....	25	South Dakota.....	3
Iowa.....	23	Wisconsin.....	3
Utah.....	15	New Jersey.....	2
Montana.....	12	Hawaii.....	1
New York.....	11	Kentucky.....	1
Pennsylvania.....	11	Maine.....	1
Indiana.....	10	New Hampshire.....	1
Idaho.....	9	Oklahoma.....	1
Massachusetts.....	9	Tennessee.....	1
Missouri.....	9	Vermont.....	1
District of Columbia.....	8	Virginia.....	1
Texas.....	7	West Virginia.....	1
Nevada.....	6	Japan.....	8
Ohio.....	5	British Columbia.....	4
Arizona.....	5	Mexico.....	2
Minnesota.....	5	England.....	1
Michigan.....	4	India.....	1
Nebraska.....	4	Nova Scotia.....	1
Connecticut.....	3	Sweden.....	1

CALIFORNIA BY COUNTIES

Alameda.....	39	Sacramento.....	12
Butte.....	6	San Benito.....	4
Calaveras.....	1	San Bernardino.....	47
Contra Costa.....	1	San Diego.....	34
Eldorado.....	2	San Francisco.....	103
Fresno.....	16	San Joaquin.....	15
Humboldt.....	13	San Luis Obispo.....	8
Inyo.....	2	San Mateo.....	35
Kern.....	6	Santa Barbara.....	5
Lake.....	5	Santa Clara.....	505
Los Angeles.....	127	Santa Cruz.....	18
Marin.....	4	Shasta.....	7
Mariposa.....	1	Solano.....	8
Mendocino.....	10	Sonoma.....	19
Merced.....	8	Siskiyou.....	1
Modoc.....	3	Stanislaus.....	7
Monterey.....	11	Sutter.....	1
Napa.....	8	Tehama.....	2
Nevada.....	1	Tulare.....	10
Orange.....	19	Ventura.....	10
Placer.....	1	Yolo.....	7
Riverside.....	25	Yuba.....	4

DEGREES CONFERRED

May 28, 1902, *September 12, 1902, †January 9, 1903.

BACHELORS OF ARTS

GREEK

Marie Borough,	Anna Frances Ruth,
Andrew James Copp, Jr.,	*Roy Edwin Schulz,
Ralph Alexander Hamilton,	Leroy Hamilton Stephens,
Kelley Rees,	†Ruth Millicent Stephenson,
Irmagarde Richards,	†Charles Wilbur Thomas, Jr.

LATIN

Annie Barrett,	Francis Arthur Lamb,
†Charlotte Elizabeth Bruce,	Alice Ida Patton,
J. Earle Cline,	Aida Eleanor Rademaker,
Ethel Allen Dodge,	Roy Valentine Reppy,
†Katharyne Elvira Garibaldi,	Imogene Anna Schanck,
Ella Webb Horine,	Marion Dickie Taylor,
Harrold Trader.	

GERMANIC LANGUAGES

Anna Bennett Ashenfelter,	Alice Louise Hamerson,
Clara Duane Barnhisel,	†Lillie Louise Koerber,
Lucy Ora Connell,	†Peter Madsen,
Maud Merrill Fay,	Mary Viola Martin,
Mary Frances Fickes,	James Clay Ray,
*Martha Mahalah Frost,	Ruth Taylor,
Maryland Elizabeth Gill,	†Edna Rawlings Walker,
Emilie Catherine Hagmayer,	Jessica Anna Wilson,

ROMANIC LANGUAGES

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Grace Olivia Kummer,	Louise Anna Mourot.

ENGLISH

Fern Abbott,	†Edith Lloyd,
Vivian Bailey,	Vivian Beatrice Losse,

Beatrice Mary Ware Bromfield,	Laura Nevada Mabury,
Harriett Henrietta Brown,	Josephine Moulton,
†Harriett Andrews Cleary,	Laura Grace Riddell,
Clarissa Maria Ellerbeck,	†Frances Marie Sherwood,
Edyth Ellerbeck,	†Roger John Sterrett,
Florence Heywood,	Walter Campbell Stevens (LL.
Elias Olan James (A. B., Union	B., Cornell Univ.),
Christian Coll.),	†Amelia Woodward Truesdell,
John Everett Johnson,	Hazel Hope Webster,
Blanche Kummer,	Alice Clara Wheeler,
Edith Marguerite Lane,	Eva Marian Wheeler,
Joseph Elmer Wilson.	

PHILOSOPHY

Leon L. Loofbourow.

PSYCHOLOGY

Mason Nutting Case.

EDUCATION

Kate Ames,	†Irvin David Perry,
Frank Henry Boren,	Carlton M. Ritter,
†Frances Cooke Holden,	Frances Elizabeth Short.

HISTORY

Julius Benedict Cohn,	Annie Rose King,
James Stone Cone,	Charlotte Mable Lord,
Jessie Loring Cook,	*William Leslie Rider,
Lucy Alma Corker,	†Charlotte Amelia Rixon,
Helen Elizabeth Fickes,	†John Joseph Ryan,
Archibald Morris Fosdick,	Maria Louise Toll,
Cora Ettie Garner,	Maud Loretta Tynan,
Mary Santa Barbara Harkins,	Fletcher Bernard Wagner,
†Delle Howard,	Lee Axtell Wood (A. B., Po-
†Lillian Seraphine Hyde,	mona Coll.)

ECONOMICS

Richard Bryan,	Kisatsuchi Koda,
†Thomas Hamilton,	Mary E. McDougald,
Lloyd Elliott Harter,	Percy McDowell,
May Hurlburt,	Roy Robinson Ross,
†Keith Elihue Wigle.	

LAW

Tom Marie Alderson (A. B.,	†Edward Michael Leonard,
Univ. of Washington),	*Richard Lockey, Jr.,
*Howard Brickell,	*Manson Fielding McCormick,
Elmer Allen Brown,	Willis Harrison Moriarity,
Charles Abraham Cantwell,	Benjamin Palmer Oakford,
Joseph Guthrie De Forest (Ph. B., Portland Univ.),	Elbert King Potter,
George William Dryer,	*Edward Walter Rice,
Charles de Young Elkus,	Frank Asbury Stevens,
Herbert Coffin Jones,	Charles Jay Swindells,
Frank Allen Leib,	†Monroe Hardon Thomas,
	Thomas Lloyd Vandeventer,
Edwin Henry Williams.	

DRAWING

Cora May Bradford,	Edith Grace Ward.
--------------------	-------------------

MATHEMATICS

Jessie Knepper,	Henry Walter Stager,
†Albert John Schwartz,	†Minna Stillman.

PHYSICS

Angus Leonard Cavanagh,	†Maximillian Duff Hopper,
Lettie Maude Garner,	Grace Nims.

CHEMISTRY

†Ethel Winona Graves,	*Mervyn Jacobs Newburg,
Elmon Hall,	†Charles August Rouiller,
Charles Lorin Harkins,	Joe Augustus Schaefer,
Winford Lee Lewis,	Sophie Edith Schoenheit,
†Cyrus Lincoln Merriam,	†Charles Thomas Stephens,
†John Pearce Mitchell,	†William Henry Sloan,
Hanzaburo Miyake,	Herbert Lane Younger.

BOTANY

Gertrude M. Barrett,	Minnie Maher,
Laura Myrtle Lathrop,	Eleanor Caroline Mugler.

PHYSIOLOGY AND HISTOLOGY

Frederic Wolcott Bancroft,	*André Edward Lee,
Victor Alexander Caglieri,	James Le Roy McWethy,
Elizabeth Proctor Cooper,	Alexander Griffith Page,
Frank Hinman,	Ethel Rhodes,
William Armfield Holt,	†Edna Ellen Rowell.

ZOOLOGY

Ruby Green Bell,	†Frank Kinichiro Mayeda,
Florence Ella Durkee,	†Frank Adams Richmond,
Ellen Mathews,	†Milo Herrick Spaulding.

GEOLOGY AND MINING

William Burton Barber,	Roy Parmelee McLaughlin,
†Harrison Streeter Coe,	Edmund David North,
David Morrill Folsom,	Edward Hoit Nutter,
Charles Edmond Kenney,	Arno Grote Thies.

CIVIL ENGINEERING

Robert Harold Bacon,	Edward Merriam Chadbourne,
John Fletcher Byxbee, Jr.,	Charles Walter Sell,
†Henry Avery Campbell,	Earle Talbot,
Swazo F. Yoshioka.	

MECHANICAL ENGINEERING

Edgar Hale Bangs,	†Francis Raber Schanck,
†Frederick Donald Hood,	Arthur Jacob Zschokke,

ELECTRICAL ENGINEERING

Herbert Harter Adams,	†Arion Siegfried Kalenborn.
George Henry Bragg, Jr.,	Charles Gonjiro Sakuma,

BACHELORS OF LAWS

H. Ray Fry, A. B.,	Ernest Stoddard Page, A. B.,
Charles Quayle, A. B.	

MASTERS OF ARTS

LATIN

James Gilman Coffin, A. B.
Ernest Whitney Martin, A. B. (Univ. of Chicago).

GERMANIC LANGUAGES

John Gottlieb Knutti, A. B. (Univ. of West Virginia).
Martin Singer, A. B. (Arkansas Cumberland Coll.).

ENGLISH LITERATURE

Mary Lucile Caldwell, A. B.
Harriet Cory, A. B.
Dewitt Montgomery, A. B.

ENGLISH PHILOLOGY

†Florence Marion Tabor Critchlow, A. B. (Northwestern Univ.)

HISTORY

Samuel Pressly McCrea, A. B.

John T. McManis, A. B.

Sarah Gates Howard, A. B. (Vassar Coll.).

MATHEMATICS

William Albert Manning, A. B. (Willamette Univ.).

CHEMISTRY

Alvin Joseph Cox, A. B.

Francis James Reidy, A. B.

SYSTEMATIC BOTANY

Le Roy Abrams, A. B.

ENTOMOLOGY

Bertha Louise Chapman, A. B.

Florence Eugenia Dorsey, A. B.

GEOLOGY AND MINING

Harry Lewis Haehl, A. B.

DOCTORS OF PHILOSOPHY

†Anton Julius Carlson, A. M., (Augustana Coll.)

Ralph Arnold, A. M.

Thomas Andrew Storey, A. M.

ALUMNI ASSOCIATION

Organized June 15, 1892

CONSTITUTION

In order to promote the interests of the University, to secure unity among its graduates, and to foster an attachment to our *Alma Mater*, we do hereby constitute ourselves an association to be known as the Alumni Association of the Leland Stanford Junior University.

1. All persons who have received a degree from the Leland Stanford Junior University are members of this Association.

2. All members of the Faculty are honorary members of this Association.

3. The officers of this Association shall be a President; one Vice-President from each successive group of five classes (provided that when the last group shall number three classes it shall thereafter be entitled to a Vice-President); a Secretary; and a Treasurer.

4. There shall be an Executive Committee to consist of the following persons: the Secretary and Treasurer of the Association, and three other persons chosen by the Association, one of whom shall be designated as Chairman of the Committee.

5. It shall be the duty of the Executive Committee to arrange the programmes for Alumni Day and other public occasions; to regulate the finances of the Association; to perform such other duties as may be imposed upon them; and to attend to all business of the Association not otherwise provided for.

6. The President shall be *ex-officio* a member of all committees. At each annual business meeting he shall appoint a committee of two persons to audit the Treasurer's accounts.

7. The officers and the Executive Committee shall be elected by ballot at the annual business meeting to be held on Alumni Day, a majority of all votes cast being necessary for election.

8. Any proposition to alter or amend these articles of association must be made at a regular meeting, and have the assent of two-thirds of the members present.

OFFICERS FOR 1902-03

President—Lester Jesse Hinsdale, '95.

First Vice-President—William Jonathan Neidig, '96.

Second Vice-President—William Webb Kemp, '98.

Secretary-Treasurer—Charles Ross Lewers, '96.

Executive Committee—Ray Lyman Wulbur, '96, A. M., '97, chairman; James Taylor Burcham, '97, LL. B., '01; Lillian Pearle Green, '98; Charles Ross Lewers, '96.

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(As last reported)

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Vice-President—Julius B. Frankenheimer, '96.

Secretary-Treasurer—Edwin Ray Zion, '94, A. M., '96.

SAN JOSE ASSOCIATION

President—Arthur Henry Washburn, '93.

Vice-President—Alfred Barstow, '95.

Secretary—Harriet Cory, '95.

Treasurer—Charles Henry Hogg, '93.

NEW YORK ASSOCIATION

President—Nathaniel Allen Carle, '98.

Secretary-Treasurer—Christopher Mason Bradley, '01.

•

DIRECTORY OF OFFICERS

[Name; title; residence; post-office (in italics), if other than Stanford University; where no post-office is given *Stanford University* is understood. The dagger (†) marks the names of men who are married. The numerals in parentheses refer to pages where further information may be found.]

- †Abbott, N., Prof. Law, (9) 318 Lincoln ave
 Abrams, L. R., Instr. Syst. Bot., (21) 9 Alvarado row
 †Adams, E. D., Assoc. Prof. Hist., (13) 3 Alvarado row
 Alden, R. M., Asst. Prof. Eng. Lit., (16) 611 Waverly st., *Palo Alto*
 Alderson, T., Asst. Law Library, (22) Mayfield, *Mayfield*
 Allardice, R. E., Prof. Math., (9) 19 Salvatierra st.
 Allen, C. G., Asst. Rom. Lang., (21) 422 Tasso st.
 Allin, C. D., Instr. Econ., (19) 363 Melville ave.
 †Anderson, E. P., Library Asst., (23) 667 Channing ave., *Palo Alto*
 †Anderson, M. B., Prof. Eng. Lit., (7) *Menlo Park*
 †Angell, F., Prof. Psychol., (9) 1005 Bryant st.
 Atkinson, W. S., Asst. Artist, (23) *Palo Alto*
 Barnett, S. J., Asst. Prof. Physics, (15) 5 Alvarado row
 Bassett, L. E., Instr. Elocution, (18) 8 Alvarado row
 †Baum, F. G., Asst. Prof. Elec. Eng., (16) 259 Hawthorne ave.
 Bell, (Mrs.) R. G., Asst. Entomology, (21) 5 Lasuen st.
 Blair, J. E., Asst. Prof. Law, (17) 1245 Waverly st.
 Blichfeldt, H. F., Asst. Prof. Math., (15) College Terrace
 Bolton, (Miss) F., Inst. Hygiene, (20) 10 Alvarado row
 †Branner, J. C., Prof. Geology, (7) 13 Alvarado row
 Bristol, (Miss) S. B., Asst. to Registrar, (21) 10 Alvarado row
 †Brook, A. L. Scott, Organist Memorial Church, 835 Waverly st.
 †Brown, C. R., Lecturer Ethics, (24) 322 22d st., *Oakland, Oakland*
 Brown, J. G., Instr. Physics, (19) 411 Lytton ave., *Palo Alto*
 †Browne, A. A., Asst. Prof. Mech. Arts, (16) Bryant st. and Addison ave.

- †Burcham, J. T., Instr. Law, (18)
760 University ave., *Palo Alto*
- Byxbee, J. F., Jr., Asst. Civil Eng., (21)
347 Alma st., *Palo Alto*
- Campbell, D. H., Prof. Botany, (8) 19 Salvatierra st.
- Cannon, H. L., Instr. Hist., (21)
- Carlson, A. J., Asst. Physiol., (21) 167 Encina Hall
- Chappel, H. W., Instr. Hygiene, (20) 12a Lasuen st.
- †Clark, A. B., Assoc. Prof. Drawing, (11) College Terrace
- †Clark, G. A., Univ. Secretary, (12) 7 Alvarado row
- †Clark, G. L., Instr. Law, (20) 531 Cowper st., *Palo Alto*
- †Clark, W., Pres. Stenog., (21)
- †Cleaveland, N., Instr. Physiology, (20) 565 Hamilton ave.
- †Cook, G. C., Instr. English, (20)
Madroño Hall, 1 Salvatierra st.
- †Cooper, W. A., Asst. Prof. Ger., (16) 334 Homer ave.
- †Copeland, E. B., Instr. Bionomics, (14) 334 Lincoln ave.
- Cox, A. J., Instr. Chem., (18) [In Europe]
- †Cubberley, E. P., Assoc. Prof. Educ., (12) 7 Salvatierra st.
- †Dodge, M. G., Assoc. Librarian, (13) 6 Alvarado row
- Dudley, W. R., Prof. Botany, (9) 9 Alvarado row
- †Duniway, C. A., Assoc. Prof. Hist., (12) 471 Addison ave.
- †Elliott, O. L., Registrar, (10) 12 Alvarado row
- †Elmer, A. D. E., Asst. Syst. Botany, (22)
427 Lytton ave., *Palo Alto*
- †Elmore, J., Asst. Prof. Latin, (16) 543 Middlefield road
- †Fairclough, H. R., Prof. Class. Lit., (11) [In Europe]
- Farrand, M., Prof. History, (11) 159 Encina Hall
- †Fish, J. C. L., Assoc. Prof. Civ. Eng., (12)
382 Lincoln ave., *Palo Alto*
- Fisher, W. K., Asst. Zool., (22) 411 Waverly st., *Palo Alto*
- †Flügel, E., Prof. Eng. Philology, (8) 1153 Cowper st.
- †Foster, B. O., Instr. Latin, (19) 334 Homer ave.
- †Franklin, E. C., Assoc. Prof. Organ. Chem., (14)
- †Frein, P. J., Asst. Prof. Rom. L., (15)
727 Cowper st, *Palo Alto*
- Gaither, R. H., Asst. Mech. Eng., (21) 13 Encina Hall
- †Gardner, D. C., Chaplain Memorial Church, (14)
1A Alvarado row
- †Gilbert, C. H., Prof. Zoology, (8) 433 Melville ave.

Directory of Officers

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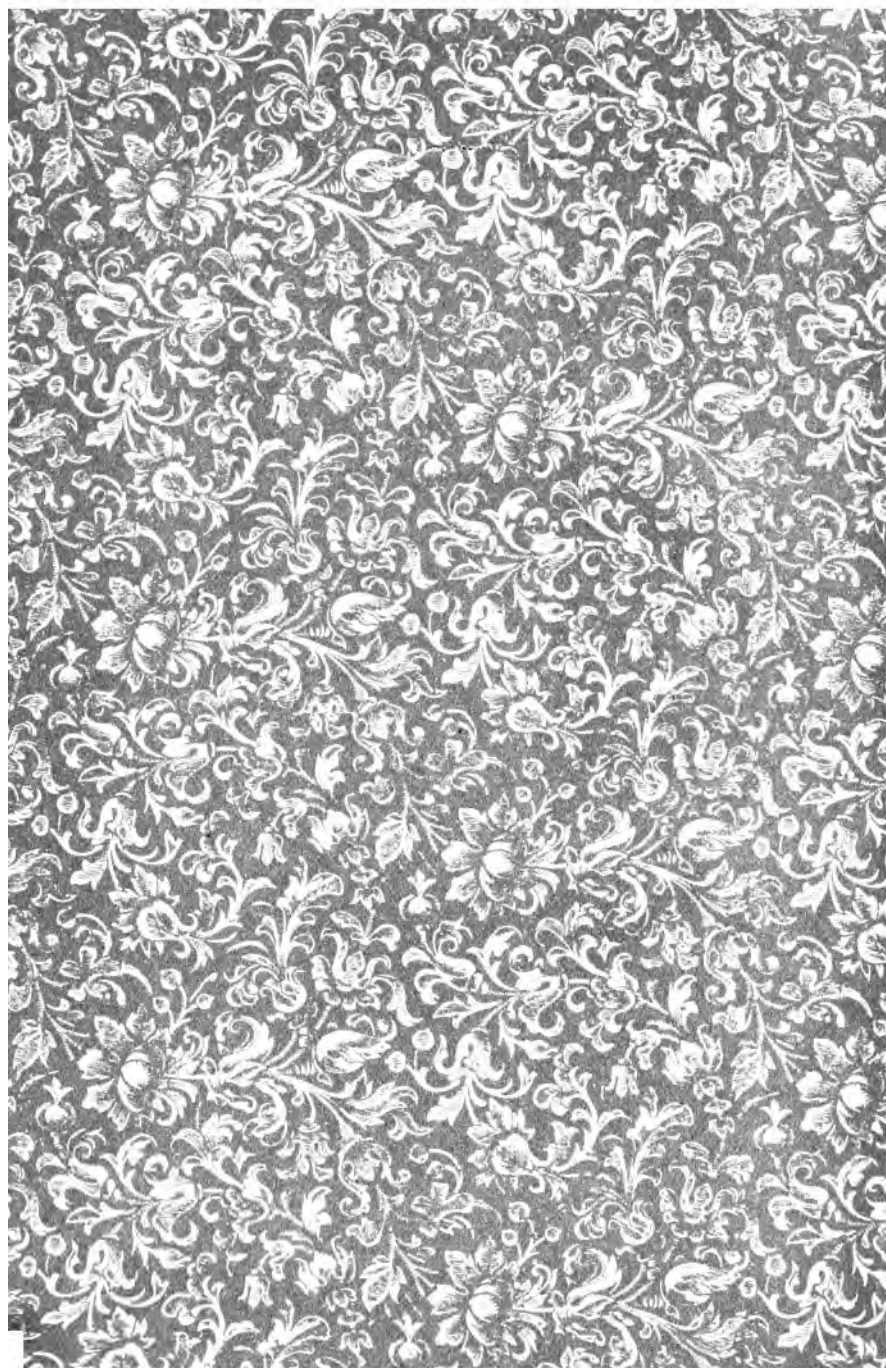
- †Goebel, J., Prof. Germanic Lit. and Philol., (9) 1247 Cowper st.
 Graebe, (Mrs.) M. D., Library Asst., (23) 1022 Waverly st.
 Green, (Miss) L. P., Chief Library Asst., (23) 5 Lasuen st.
 †Green, R. L., Prof. Math., (10) 13 Salvatierra st.
 †Griffin, J. O., Prof. German, (10) 14 Alvarado row
 Haven, (Miss) M. E., Library Asst., (23) 5 Salvatierra st.
 Hays, (Miss) A. N., Library Asst., (23) Madroño Hall
 †Heath, H., Assoc. Prof. Zool., (14) 711 Cowper st., *Palo Alto*
 †Hodges, C. E., Resident Architect, (24) Pine Cottage
 †Hoskins, L. M., Prof. Applied Math., (9) 1027 Bryant st., *Palo Alto*
 Hudson, C. B., Asst. Artist, (22) *Palo Alto*
 Hughes, (Miss) F., Cataloguer, (23) 1251 Bryant st.
 James, E. O., Asst. English, (22) 103 Encina Hall
 Jarnick, J., Asst. Latin, (22)
 †Jenkins, O. P., Prof. Physiol. and Histol., (7) 3 Lasuen st.
 †Johnston, O. M., Assoc. Prof. Rom. Lang., (13) 4 Alvarado row
 Jollyman, J. P., Asst. Elec. Eng.,
 Searsville road, College Terrace
 †Jordan, D. S., President, (7) Xazmin House, Serra ave.
 Kalenborn, A. S., Asst. Elec. Eng., (22) 192 Encina Hall
 Kellogg, V. L., Prof. Entomol., (10) 19 Salvatierra st.
 †Lathrop, C. G., Treasurer Univ., (24) Alta Vista
 Lawson, A. A., Instr. Gen. Bot., (19) 17 Salvatierra st.
 †Lenox, L. R., Prof. Anal. Chem., (10) Castro
 Lewers, C. R., Asst. Prof. Law, (15) 8 Salvatierra st.
 Liggett, J. B., Foreman Machine Shop, (20) Addison ave. and Webster st.
 Long, W. R., Asst. Spanish, (22) 545 Bryant st., *Palo Alto*
 Lord, (Miss) C. M., Asst. History, (22) 526 Waverly st., *Palo Alto*
 Lyon, D. A., Instr. Metallurgy, (20) 8 Salvatierra st.
 McDowell, J. E., Asst. Registrar, (17) 6 Lasuen st.
 †McFarland, F. M., Assoc. Prof. Histol., (11) [In Europe]
 †McLean, S. J., Assoc. Prof. Econ., (13) 461 Addison ave.
 †Maddock, G. F., Asst. Prof. Mech. Eng., (16) 637 Gilman st.
 Manning, W. A., Instr. Applied Math., (20) 650 Waverly st.
 †Martin, E. W., Instr. Latin, (19) 129 Emerson st., *Palo Alto*

- Martin, (Miss) L. J., Asst. Prof. Psychology, (15)
15 Salvatierra st.
- †Marx, C. D., Prof. Civil Eng., (8) 357 Kingsley ave.
- †Marx, G. H., Assoc. Prof. Mech. Eng., (12) 356 Lincoln ave.
- †Matzke, J. E., Prof. Romanic Lang., (10) 1211 Bryant st.
- Miller, G. A., Assoc. Prof. Math., (14) Encina Hall
- Millis, H. A., Asst. Prof. Econ., (17)
- Mitchell, J. P., Asst. Qual. Anal., (22)
951 Bryant st., *Palo Alto*
- Moreno, H. C., Instr. Applied Math., (18)
650 Waverly st., *Palo Alto*
- Morita, K., Asst. Artist, (23) Encina Hall
- †Murray, A. T., Prof. Greek, (9) 1019 Bryant st.
- Neldig, W. J., Instr. English, (18) 8 Alvarado row
- †Newcomer, A. G., Assoc. Prof. Eng., (11)
Forest court, *Palo Alto*
- †Newsom, J. F., Assoc. Prof. Mining and Metal., (13)
10 Alvarado row
- †Newton, R. H., Pastor Memorial Church, (11)
17 Alvarado row
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- Noyes, G. L., Asst. Prof. Drawing, (17) Kingsley ave.
- Olsson-Seffer, P. H., Asst. Syst. Botany, (22) 199 Encina Hall
- †Peirce, G. J., Assoc. Prof. Botany, (12) 943 Bryant st.
- †Peterson, H. C., Curator Museum, (23)
660 Homer ave., *Palo Alto*
- †Peterson, J. E., Foreman Forge, (17)
660 Homer ave., *Palo Alto*
- †Price, G. C., Assoc. Prof. Zool., (11) 5 Salvatierra st
- Putnam, E. K., Instr. English, (18) 14 Alvarado row
- †Ramsey, M. M., Asst. Prof. Spanish, (15) 14 Lasuen st.
- Ray, (Miss) L. E., Mistress Roble Hall, (23) Roble Hall
- †Rendtorff, K. G., Asst. Prof. German, (14)
827 Middlefield road, *Palo Alto*
- †Rieber, C. H., Assoc. Prof. Philosophy, (14) 1146 Waverly st.
- †Rogers, F. J. Asst. Prof. Physics, (15)
533 Middlefield road, *Palo Alto*
- †Rolfe, H. W., Assoc. Prof. Greek, (13)
Lincoln ave. and Ramona st.
- Rose, (Miss) S., Instr. Hygiene, (21) 1 Salvatierra st.

- †Sanford, F., Prof. Physics, (8) 450 Kingsley ave.
 Schmutzler, C. F., Instr. Ger., (18) 219 Ramona st., *Palo Alto*
 Seward, S. S., Jr., Instr. English, (18) 431 University ave.
 †Show, A. B., Prof. Europ. History, (10) 353 Melville ave.
 †Searles, C., Asst. Prof. Rom. Lang., (16) 5 Alvarado row
 Shimada, S., Asst. Artist, (23) Encina Hall
 †Smith, A. W., Prof. Mech. Eng., (8) 430 Kingsley ave.
 †Smith, J. P., Prof. Mineral. and Paleon., (10) 1035 Bryant st.
 Smith, (Mrs.) M. R., Assoc. Prof. Social Sci., (12)
 430 Kingsley ave.
 †Snedden, D. S., Asst. Prof. Educ., (17) 14 Salvatierra st.
 Snodgrass, R. E., Instr. Entomol., (19)
 †Snow, W. F., Asst. Prof. Hygiene, (16) 9 Salvatierra st.
 †Snyder, J. O., Asst. Prof. Zool., (17) Cowper st.
 †Soule, E., Foreman Manual Training, (17)
 633 Lytton ave., *Palo Alto*
 Stanley, E. J., Instr. Woodworking, (19) 345 Hamilton ave.
 †Starbuck, E. D., Asst. Prof. Educ., (14) 360 Kingsley ave.
 Starks, (Mrs.) C. L., Asst. Drawing, (21) 611 Gilman st.
 †Starks, E. C., Curator Zoology, (18) 611 Gilman st.
 †Stearns, H. D., Assoc. Prof. Physics, (12) 3 Salvatierra st.
 †Stillman, J. M., Prof. Chem., (8) 2 Alvarado row
 Stoltenberg, (Miss) C. S., Instr. Physiol., (17)
 17 Salvatierra st.
 †Storey, T. A., Asst. Prof. Hygiene, (16) [Boston, Mass.]
 Suzzallo, A. H., Instr. Educ., (21) *San Francisco*
 †Swain, R. E., Asst. Prof. Chem., (17)
 638 Channing ave., *Palo Alto*
 Thompson, (Miss) B. H., Library Asst., (23)
 327 Hamilton ave., *Palo Alto*
 Trader, H., Library Asst., (23) 16 Salvatierra st.
 Wellman, (Miss) M., Artist Entomol., (23) 11 Salvatierra st.
 †Whitaker, A. C., Instr. Economics, (19) 2 Salvatierra st.
 †Wilbur, R. L., Asst. Prof. Physiol., (5) , 11 Alvarado row
 †Wing, C. B., Prof. Struct. Eng., (9) 345 Lincoln ave.
 Young, S. W., Assoc., Prof. Chem., (13) 19 Salvatierra st.

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